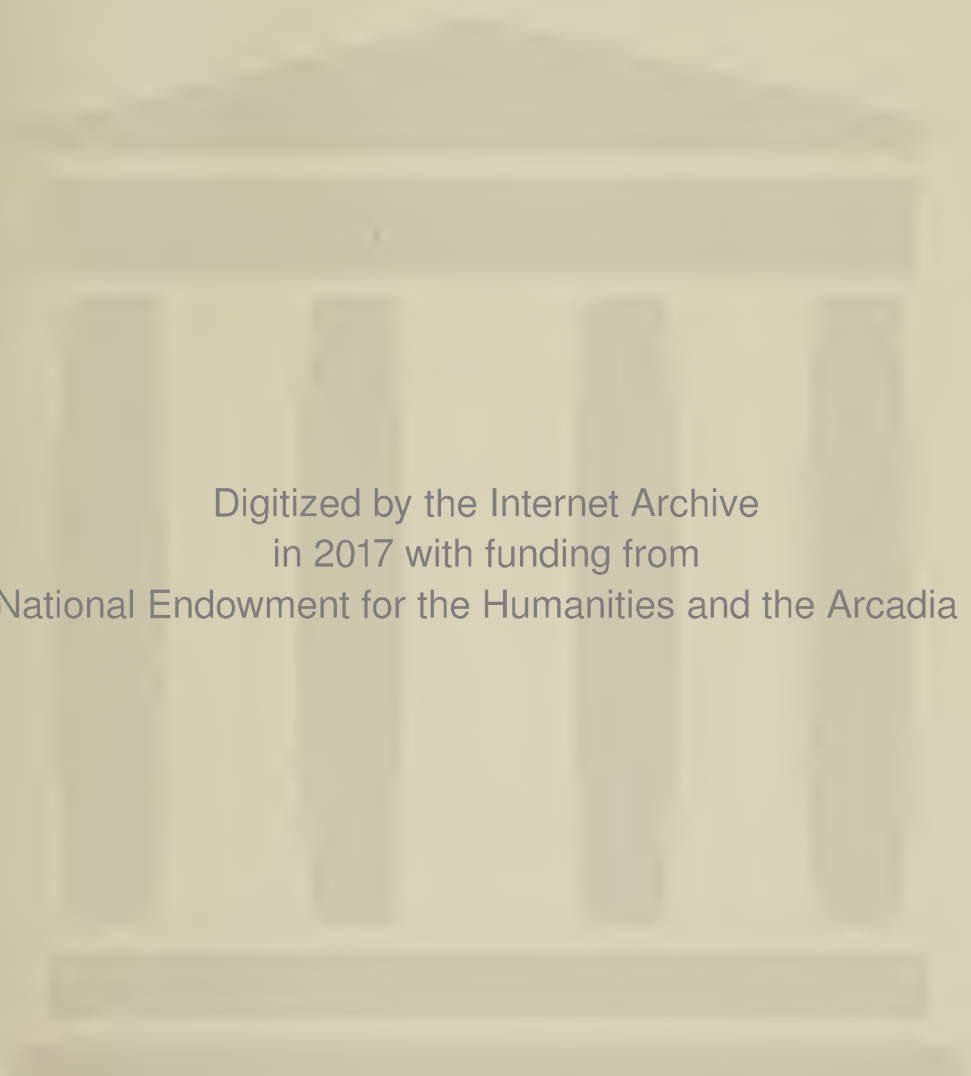




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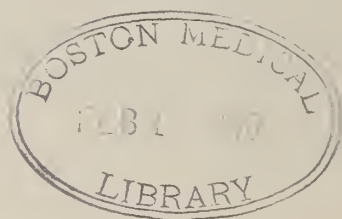
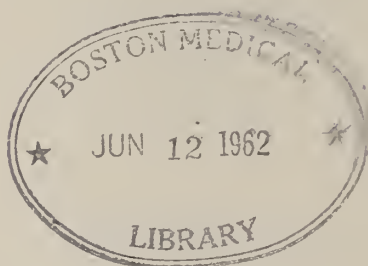
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# MEDICAL ANNALS

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### COMMENTS ON THE INTERPRETATION OF BLOOD PRESSURE MEASUREMENTS\*

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Blood pressure measurement is the simplest and most routine of all instrumental diagnostic methods. Since it reflects so many of the reactions of the cardiovascular system in health and disease, its usefulness can be greatly enhanced by a consideration of some of the clinical and laboratory methods for its determination as well as the present concepts of its relationship to various disorders of the circulation.

It seems appropriate to consider first of all the accuracy of the auscultatory technic. Experiments on animals have shown that blood pressure values determined by means of an oscillometer which employs optical recording correspond very closely with those determined by the direct method.<sup>1</sup> In man, simultaneous recording of the optical oscillogram and the pulse sounds has shown that the diastolic pressure level is indicated, as generally believed, by beginning diminution in the intensity of the sounds as the cuff is deflated.<sup>2</sup> The chief source of error is the fact that frequently the change in pulse sounds is gradual, in which case the diastolic estimate is likely to be low. This is especially true in cases of aortic regurgitation. As to systolic values, the pressure level at which

blood first passes under the constricting cuff is usually audible as a pulse sound. This occurs at a variable point between end systolic (the forward pressure of the blood column) and lateral systolic pressure (the pressure to the side of the blood column). It is therefore unsuitable for use in precise hemodynamic studies. However, if arbitrarily considered to indicate clinical systolic pressure, this criterion can be regarded as perfectly satisfactory for practical purposes. In addition, it may be mentioned that compression of the limb incidental to taking the blood pressure produces both local and systemic pressure changes, especially when deflation of the cuff is too rapid, but such errors are comparatively slight.<sup>1</sup>

Efforts to increase the information derived from clinical blood pressure measurement have centered around the use of an oscillometer. This instrument, of which several types are available, amplifies the pulse so that its volume is indicated quantitatively at different pressures of the cuff. The clinical oscillometer is used to determine the systolic and diastolic and, in addition, the mean arterial pressures. Systolic measurements so obtained appear to be reasonably accurate, but unless a graphic recording

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\* Read before the Society, October 26, 1938.

model is used and the criteria are very clear (which does not always occur) the diastolic pressures are only approximately indicated and the error is often considerable.<sup>2</sup> It has been claimed that mean pressure is the level at which the oscillations reach their widest amplitude.<sup>3</sup> This criterion, however, is not only obscure, but even when definite it has not been found to coincide with the mean pressure as estimated by more reliable methods.<sup>2</sup> For the rapid and accurate measurement of blood pressure, the oscillometer is therefore less satisfactory than the conventional auscultatory method. On the other hand, it does serve two additional functions. A graphic model affords a permanent record of any irregularities of the pulse, a procedure which is scarcely necessary, but often very convenient. It also permits a quantitative estimate of the pulse volume and this is extremely helpful in the diagnosis of peripheral vascular disease.

The optical oscillometric technic<sup>4,5</sup> is capable of recording end and lateral systolic pressures, the pressure of the dicrotic notch, diastolic pressure, the mean pressure throughout the pulse cycle and the mean pressure during systole or diastole alone. It has been devised, not because extreme accuracy is necessary for clinical purposes, but in order to obtain quantitative estimates of the output and work of the heart, the peripheral resistance of the vascular system and the elasticity of the arteries (i.e., the degree of arteriosclerotic change). Some of the data obtainable by optical recording are shown in table 1. These studies have proven extremely helpful in clarifying the mechanism of different types of cardiovascular insufficiency.<sup>6</sup> When ultimately simplified for general clinical use, they will undoubtedly serve an important function in diagnosis and prognosis.

The limits of normal blood pressure are difficult to define with any certainty. What is normal for one person is obviously not necessarily so for another, and factors such as emotion, posture, fatigue, eating, respiratory variations and temperature cause much greater diurnal variation than is generally appreciated. According to Wiggers<sup>7</sup> the highest expected

values at rest are 120/80 at 20 years, 140/90 up to 40 years and 150/90 up to 65 years. Statistically,<sup>8</sup> the duration of life is longer in groups of persons having pressures somewhat lower than these and even definite hypotension is commonly associated with longevity. In gen-

**Table 1.** *Values for various factors in the circulation obtained in a normal subject from optically recorded blood pressure and pulse wave velocity*

|                                                                                                                  | <i>mm. Hg</i>   |
|------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Blood Pressure</b>                                                                                            |                 |
| Clinical.....                                                                                                    | 105             |
| Systolic (lateral).....                                                                                          | 98              |
| Dicrotic.....                                                                                                    | 83              |
| Diastolic.....                                                                                                   | 58              |
| Mean.....                                                                                                        | 79              |
| Systolic mean.....                                                                                               | 87              |
| Pulse pressure.....                                                                                              | 40              |
| Pulse Rate.....                                                                                                  | 69 per minute   |
| <b><i>meters per second</i></b>                                                                                  |                 |
| <b>Pulse Wave Velocity</b>                                                                                       |                 |
| Heart to subclavian.....                                                                                         | 3.26            |
| Subclavian to femoral.....                                                                                       | 5.90            |
| Subclavian to brachial.....                                                                                      | 5.73            |
| Femoral to dorsalis pedis.....                                                                                   | 8.78            |
| Cardiac Output per minute.....                                                                                   | 4.12 liters     |
| Cardiac Index (C.O. per sq. cm. surface area).....                                                               | 2.41 liters     |
| Cardiac Output per beat.....                                                                                     | 60 c.c.         |
| Compression Work of Left Ventricle per beat.....                                                                 | 7,500 gm. cm.   |
| Compression Work of Left Ventricle per minute.....                                                               | 5.17 kg. meters |
| Effective Peripheral Resistance (mean pressure/cardiac index $\times 3 = 70$ to 130 in normal young subjects)... | 98              |
| <b>Distensibility of Arteries (vol. increase per mm. Hg pressure change)</b>                                     |                 |
| Aorta and Central Arteries.....                                                                                  | 0.52            |
| Peripheral and Large Arteries.....                                                                               | 0.14            |
| Total Distensibility.....                                                                                        | 0.66            |

eral, blood pressure tends to be higher in men than in women and to increase gradually with age. The rise, however, is not continuous and should terminate in the sixth decade of life. The observance of this phenomenon has revealed a very interesting mechanism which compensates for senile vascular sclerosis. In young individuals the heart is able to greatly



increase its output per beat without excessive elevation of blood pressure because of the elasticity and low resistance of the aorta. With advancing age the aorta becomes less elastic so that the same cardiac output should cause progressive elevation of blood pressure. The compensatory mechanism which in the later years of life prevents the blood pressure from rising to dangerous levels consists of gradual stretching of the aorta, in the form of dilatation and tortuosity. The resultant increase in capacity of the arterial tree allows the stroke volume to be accommodated with much less amplitude of pulsation and therefore with less back pressure on the heart than would otherwise be possible. Loss of reserve is shown, however, by the fact that the cardiac output cannot be increased, as in exercise, without producing an exaggerated rise of blood pressure.

Blood pressure levels are not the same in different parts of the body, owing to the influence of differences in velocity of flow in different vessels.<sup>9</sup> The femoral systolic pressure averages 38 mm. Hg higher than the brachial, and this difference is greatly increased during exercise and in the presence of aortic insufficiency.<sup>10</sup> A marked inequality, especially in the diastolic level, between the two arms is indicative of a pathologic causative process, but differences of less than 10 to 15 mm. Hg are not necessarily significant.

Blood pressure changes in the presence of cardiac insufficiency are often confusing. It is a common impression that myocardial weakness is accompanied by a fall of pressure. This view is not entirely correct. One of the chief mechanisms which compensates for a failing cardiac output is generalized vasoconstriction,<sup>11</sup> which tends to sustain blood pressure and maintain an adequate coronary and cerebral circulation. In many cases the blood pressure, and especially the diastolic level, during cardiac failure may thus be actually raised above the previous height, a phenomenon described by the Germans as the "Stauungshochdruck." Only in the terminal stage is it characteristic for the blood pressure to fall. The sequence is therefore an initial rise followed by a fall of pressure as indi-

cated by figure 1. The response of the blood pressure to effective treatment depends upon the stage in which therapy is instituted. If improvement occurs during the stage of elevated pressure, the result will be to lower the pressure, but if therapy becomes effective in the late stage, blood pressure will subsequently rise. It is especially important to remember this fact in treating cases of hypertension where digitalis is often withheld because of an unwarranted fear of raising the blood pressure.

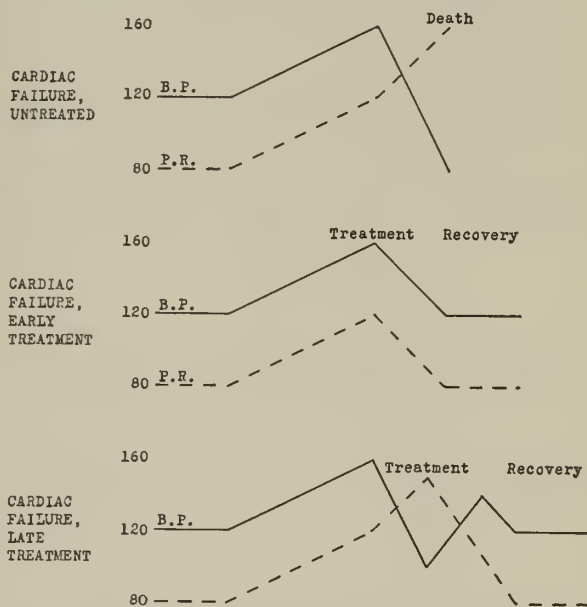


FIG. 1. Schematic illustration of the characteristic direction of change in blood pressure and heart rate during cardiac failure.

In angina pectoris the blood pressure reaction must not be interpreted dogmatically. Although acute myocardial infarction generally causes a sustained lowering of pressure, the initial reaction is variable (fig. 2). If shock is produced, the pressure may be low at first and then rise. If shock is not produced, the pressure may first rise due to pain and excitement and then fall. In angina pectoris without myocardial infarction, the blood pressure reaction is still more complex (fig. 2). If the pain is slight, the pressure may be unchanged; if severe, it may be elevated, and if excruciating, it may fall due to mild shock. On the other hand, a

change in blood pressure may be the cause rather than the effect of the attack. Such, for example, is the rise of pressure due to exercise or emotion which increases cardiac work, or the fall of pressure due to abnormal vagal reflexes which decreases coronary blood flow, both of which may give rise to myocardial ischemia and pain.

In the diagnosis of non-renal hypertension, the character of the blood pressure is very helpful. Conditions such as thyrotoxicosis, aortic insufficiency and aortic sclerosis present no great difficulty. Less apparent are the cases of

clinical characteristics and need not be considered here.

Occasionally cases of hypertensive heart disease are discovered in which, paradoxically, the blood pressure is within normal limits. In some instances the lowering of blood pressure has been brought about by compensatory dilatation and tortuosity of the aorta. In others, the apparently normal pressure is the result of failure of cardiac or peripheral vascular compensation. In a third group, subsequent examinations reveal the fact that the blood pressure fluctuates considerably, being maintained at comparatively high levels for variable periods which alternate with periods of normal pressure. If the explanation of this phenomenon is sometimes obscure, we should at least not make the mistake of presuming that a lowering of blood pressure is necessarily an indication of the effectiveness of therapy for it may accompany failure of cardiovascular function rather than improvement. Often it occurs without any relationship whatever to the type of medication employed. The same is true of the reduction of blood pressure which is commonly found on the patient's second or third examination. Analysis of a series of heart clinic records demonstrates that in a large percentage of cases the blood pressure is substantially lower on the second visit and the patient says that he feels better in spite of the fact that no active medication has been administered in the interim.

A final comment on hypertension concerns the blood pressure level in relation to prognosis. I have recently seen a patient 70 years old whose systolic pressure has been over 300 mm. Hg for several years at least and who is only now beginning to have severe symptoms. Another patient recently admitted to the Philadelphia General Hospital without any evidence of congestive failure has a systolic pressure over 200 mm. Hg and is 108 years old. On the other hand, the diastolic pressures in both instances were under 125 mm. Hg. Obviously, it is the diastolic pressure which is by far the more significant from the prognostic aspect.

Sustained hypotension is a frequent accompaniment of febrile disease, cachectic states and disease of the adrenal cortex, but in subjects

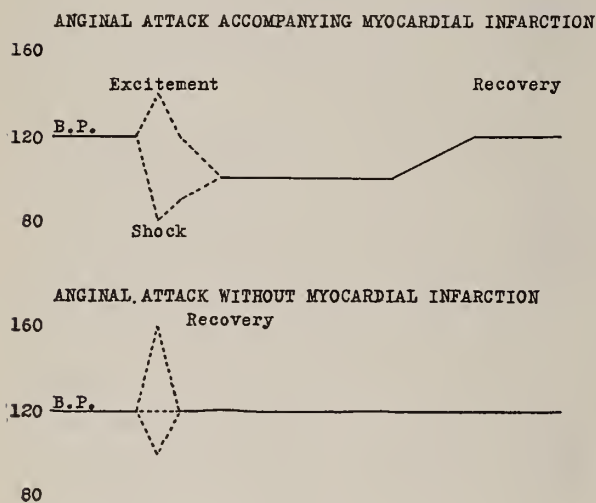


FIG. 2. Schematic illustration of the direction of change of blood pressure as a result of an attack of angina pectoris with and without myocardial infarction. The dotted lines indicate changes which are inconstant.

vasomotor neurosis, adrenal tumor and coarctation of the aorta. In coarctation of the aorta, blood pressure is high in the arms but low in the legs. In vasomotor neuroses, systolic pressure may be as high as 170 mm. Hg, but diastolic pressure is seldom over 100 mm. Hg. Adrenal tumor or paraganglioma gives rise to a blood pressure reaction which is almost pathognomonic; the patient usually has a perfectly normal pressure except during recurrent seizures of palpitation, headache and dizziness which are accompanied by severe hypertension in the general range of 220/140 mm. Hg. Other types of hypertension such as that which occurs at the menopause may be recognized by the attendant



who are otherwise normal, it should rarely, if ever, be considered indicative of any significant disorder. Transient hypotension is of two types. Hypostatic hypotension consists of a gravitation of blood to the dependent parts of the venous system in upright postures with compensatory vasoconstriction, slight fall of blood pressure and acceleration of the heart rate. Orthostatic hypotension consists of a failure of vasoconstrictor and cardioaccelerator compen-

sation in upright postures so that the blood pressure falls to exceedingly low levels and the subject very often faints. Its occurrence suggests the coexistence of myasthenia gravis or, more often, some disease of the central nervous system. Such a case is illustrated in figure 3, where it will be seen that the blood pressure fell from 145/90 mm. Hg to 60/50 mm. Hg when the subject changed from a recumbent to a standing posture. Excitation of a supplementary vasoconstrictor reflex (induced by ischemia of the arm muscles) raised the blood pressure promptly from 85/65 mm. Hg to 210/145 mm. Hg. It is remarkable that no sensations whatever were experienced by the patient during these fluctuations of pressure. This phenomenon is a dramatic example of the many apparent exceptions to our current clinical concepts of blood pressure.

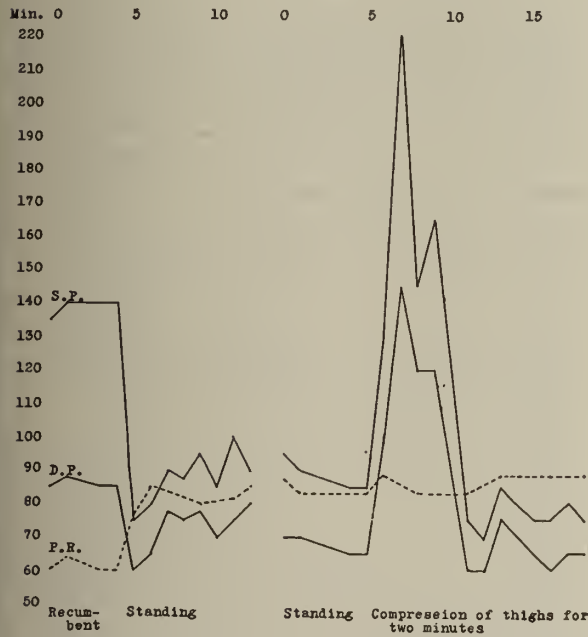


FIG. 3. Blood pressure and heart rate in a case of orthostatic hypotension. The degree of acceleration of the heart rate is scarcely commensurate with the great fall of blood pressure on changing from a recumbent to a standing posture. In the standing posture a rapid and striking rise of blood pressure could be produced by arrest of the circulation to a limb accompanied by exercise of the limb muscles.

**The Treatment of Liver Disease.** The principal requirements in the treatment of parenchymatous hepatic disease appear to be the maintenance of optimal conditions to allow for regeneration and repair of the parenchyma of the liver.

The use of special diets high in carbohydrate, vitamin concentrates, and liver extract parenterally are valuable in this connection. The treatment of hepatic insufficiency depends chiefly on the maintenance of a high intake of fluid with ample supplies of glucose; no specific protective substances, as yet, have been applied success-

fully to the treatment of this condition. The hemorrhagic diathesis associated with chronic hepatic disease and jaundice is dependent, in part, on deficient absorption of substances necessary for coagulation of the blood and, in particular, on depletion of the prothrombin of the blood because of hepatic injury. The use of bile, bile salts, and vitamin K in treating this condition has been discussed.

Extract from article by ALBERT M. SNELL, M.D., F.A.C.P., Rochester, Minnesota, *Annals of Internal Medicine*, November 1938, p. 605.

#### BIBLIOGRAPHY

1. BAZETT, H. C., LAPLACE, L. B., AND SCOTT, J. C.: *Am. J. Physiol.*, 1935, 112, 182.
2. BAZETT, H. C., AND LAPLACE, L. B.: *Am. J. Physiol.*, 1933, 103, 48.
3. PACHON, V., AND FABRE, R.: *Compt. rend. Soc. de biol.*, 1924, 90, 210.
4. BAZETT, H. C., AND LAPLACE, L. B.: *Am. J. Physiol.*, 1933, 103, 321.
5. BAZETT, H. C., COTTON, F. S., LAPLACE, L. B., AND SCOTT, J. C.: *Am. J. Physiol.*, 1935, 113, 312.
6. BAZETT, H. C., LAPLACE, L. B., AND SCOTT, J. C.: To be published.
7. WIGGERS, C. J.: *Physiology in Health and Disease*. Philadelphia, Lea, 1934.
8. NORRIS, G. W., BAZETT, H. C., AND McMILLAN, T. M.: *Blood Pressure*. Philadelphia, Lea and Febiger, 1927.
9. BAZETT, H. C.: *Am. J. Physiol.*, 1924, 70, 550.
10. BURDICK, W., CLARKE, N., ET AL.: *Am. J. Physiol.*, 1925, 72, 169.
11. HARRISON, T. R.: *Physiol. Rev.*, 1938, 18, 86.

**LUNACY PROCEDURE UNDER THE NEW LAW\***

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In June 1938 the law regulating lunacy procedure in the District of Columbia was changed. The old routine trial of all such cases by jury was abolished, and a Commission on Mental Health established. This Commission is drawn from a panel of nine District of Columbia residents, one of whom is a member of the bar of the District Court who serves as a continuing chairman and the remaining eight who are practicing physicians with a minimum of five years' psychiatric experience. The medical members serve in groups of two for three-month periods. All members are appointed by the Justices of the District Court. The Chief Justice allots the terms of service. He also has authority to make changes or substitutions as he may see fit. This is necessary in event of illness, or in the event that a member may withdraw from considering any patient concerning whom prejudice or special interest might be cited. As a matter of convenience this authority to make changes has been delegated to the chairman.

The function of the Commission is essentially that of fact-finding. Hearings are held, not secretly, although individuals having no relevant information or definite interest in the patient are excluded, but privately, at which everyone who may assist by testimony is heard. This includes any relatives, friends, arresting officer or other government officials, social workers, neighbors, and in addition, anyone whom the patient may wish to be present. Also an attorney may be present; or if necessary the court may appoint either an attorney or a guardian ad litem or both. If necessary, attendance may be compelled by subpoena.

At the discretion of the Commission, hearings may be held anywhere in the District of Columbia. As a matter of convenience to the greater number of patients, most hearings have been held at Gallinger Municipal and Saint Eliza-

beths Hospitals. Should the physical or mental condition of the patient demand it, hearings may be held in the home, but the number of these cases is kept at a minimum because of the time element involved.

Cases may be referred to the Commission in the following manner. A verified petition is filed with the court accompanied by the affidavits of two responsible residents of the District of Columbia alleging that the person is of unsound mind, unable to manage his affairs, is not fit to be at large and is in need of treatment. The judge may then issue an attachment, and the person be detained in Gallinger or other hospital. Within forty-eight hours he must be examined and, if sane, freed. If not, he is certified to the Commission. This order of attachment and detention is least often used. So far but one such case has been heard.

Also, any person with whom the alleged insane person may reside or be staying, the nearest relative of age, or friend, or committee, any duly accredited agent of the Board of Public Welfare, or any officer authorized to make arrest, may make and file with the District Court an affidavit of the facts and apply for a writ de lunatic inquirendo.

Of course, most patients certified have been first observed at Gallinger or Saint Elizabeths Hospitals. However, patients in their homes or residences may be considered without such institutional observation. For instance, patients under the care of private physicians who may recognize the incompetency of an individual, and feel that a committee should be appointed to conserve that individual's resources, or who may advise intramural treatment or detention, may be certified for consideration by the Commission. Up to the present it has been found time-saving to request that an attorney prepare the petition, especially as his services are usually needed also in assisting in

\* Read before the Section on Neurology and Psychiatry, October 6, 1938.

the appointment of a committee and in safeguarding the patient's estate.

At least three days' notice of the hearing must be served personally on the patient and notice is given to relatives living in the District of Columbia. Subpoenas are usually served on arresting officers and complaining witnesses. Also prior to the hearing the Commission examines the patient with respect to his mental condition.

On the basis of this examination and, in addition, on any facts elicited at the hearing, an effort is made to form an opinion as to his mental condition. The decision must be unanimous. If disagreement exists and is so reported, the Court hears the case unless a jury trial is demanded.

The Commission acts to determine:

1. The sanity or insanity of the alleged insane person
2. Length of residence in the District of Columbia
3. Ability of relatives or Committee to pay all or part of the maintenance in Saint Elizabeths or other hospital. (At present the per diem cost at Saint Elizabeths is \$1.80.)

After the hearing the Commission makes one of the following recommendations:

1. That the person is of sound mind and should be discharged forthwith and the petition dismissed.

2. That a definite diagnosis cannot be made without further study or that the mental incapacity will be of short duration and that the patient should be temporarily confined in a suitable hospital for a period of not more than thirty days, during which time the Commission shall examine the patient and make a recommendation for final disposition of the case, or further temporary commitments may be ordered.

3. That the patient is of unsound mind, and should be committed to Saint Elizabeths or other hospital, either at public expense or wholly or in part at the expense of relatives able to pay. Such a finding is made carefully, and usually after agreement by the relatives, for

such obligations are made by court order and have the same force as an alimony order. If financially able, the parents, spouse, adult children, guardian or committee may be forced to pay or contribute a part; contributions by others is volitional.

4. The Commission may also find that the patient is of unsound mind but is harmless, and may safely be committed to the care of such named relatives or friends as may be willing to accept the care and custody of the person, under such conditions as may be specified by the Commission.

The report made, a copy is served on the patient, or attorney if any, with notice that he has ten days in which to demand a jury trial. This demand may be made by himself, anyone acting in his behalf or by the court. Then a jury trial is considered within ten days unless the time is extended by the court. At these trials the old procedure is followed. The hearing is held *de novo*; the patient may have his attorney or the court may assign one, or he may be represented by one of the corporation counsel's assistants. The members of the Commission are competent and compellable witnesses.

Should no such trial be requested, or if such a demand is withdrawn within the ten-day period, the judge, sitting in equity court, makes a final determination of the sanity or insanity of the alleged insane person. At his own discretion he may accept the recommendation of the Commission, order further observation, demand further proof or dismiss the petition. In other words, he may do as he sees fit.

The Commission makes recommendations; only the court can make an adjudication.

Insane patients not residents of the District of Columbia may be temporarily committed to Saint Elizabeths Hospital, pending arrangements for transfer to their residence. If indigent, such expense of transfer is borne by the District of Columbia.

Payments for maintenance are collected by the Board of Public Welfare, who also effect transfer to other jurisdiction. Effective liaison with this department has been secured by de-



tailoring three of their members to the office of the Commission.

Hearings are also held when requested by insane patients who have been committed to mental hospitals and have been paroled and away from the hospital for six months or more. This is essentially to consider the restoration of legal rights to such individual.

Recommendations are then made as to sanity or insanity, and the patient has the right to appeal for trial by jury. At its hearings, the Commission has the right to examine records, physicians or attendants of the hospital where the patient has been treated or detained. Also a recommendation may be made for a temporary commitment, not to exceed thirty days, for further observation.

Therefore, it is seen that when proper certifications are made to the court, the Commission examines the patient, holds hearings after due notification, elicits as fully as possible any testimony relevant to the patient's mental condition, his financial status or that of his relatives, and determines if possible his legal residence. Much has been done to lighten the burden on the taxpayers by returning non-residents as promptly as possible and by receiving whole or part payments from the patient's estate or from financially able relatives.

Because of the wording of the law the court has held that only after the ten-day appeal period has passed may there be an actual adjudication and transfer of the patient to Saint Elizabeths or other hospital.

It may be noted that the Commission is empowered to recommend commitment to any suitable institution in the District.

I believe that the law might well be amended to include commitment of psychotic veterans to the care and custody of the Veterans' Administration rather than to a particular institution, which might then have the right to transfer them to any designated hospital. This would not influence procedure in any respect, but would expedite hospitalization of veterans if there were a lack of suitable local facilities. It would also expedite the return of veterans not

residents here and in this way lessen expense on the District of Columbia.

The Commission must concern itself with more than the type and extent of the patient's mental condition. The public welfare including, though by no means dominated by, the problems of relatives, friends or even public officials is of moment, and finally there is the right of the individual himself. However desirable from the medical or sociological standpoint, it is obvious that the Commission has no right to impose treatment or restraint on the liberty of anyone who, considered broadly, is not of unsound mind. And this includes paralytics with symptoms predominately at the serologic level.

Fortunately such problems are but rarely encountered. In general, we have been gratified by the response of the vast majority of borderline cases to a sympathetic consideration and explanation of their problems. Many become eager to avail themselves of needed treatment and chafe at the ten days' period of waiting imposed by law after the hearing. Herein, I believe, is an apparent defect in the present law. Such individuals should, of course, be given an opportunity to receive immediate treatment pending adjudication after the legal time interval. This wait, however, is not an unmitigated evil. In several instances facts regarding the legal residence or the financial status of the patient or legally responsible relatives have been brought to light, allowing modification of the final court order, effecting considerable saving to the taxpayers of the District of Columbia. Hence this fact and the safeguarding of the right of appeals should cause us to move slowly in recommending changes. Also a change in the mental condition may permit discharge or further observation.

It is hoped that the court may reconsider its decision as to the ten-day wait for hospitalization. In uncontested cases this wait during adjudication might often profitably be spent at Saint Elizabeths Hospital.

Another solution, with the law as it stands, occurs to me. It is the development of the psychopathic department at Gallinger with ade-

quate personnel and necessary material adjuncts together with an extended program for treatment. Then this institution could improve its opportunity for service as well as its reputation in the public mind.

With intensive treatment including malaria, shock therapy, possibly psychotherapy, together with a judicious use of continuances on the part of the Commission, many organic and acute cases would entirely escape the stigma of adjudication. This is especially to be considered in view of the already existing provisions for voluntary admissions there. This, in brief, is the present procedure of the Commission. It has been developed slowly, partly by trial and error.

The legal member deserves special commendation. The Act states, "It shall be his duty, and he shall have authority to direct the proceedings and hearings in such a manner as to insure dependable ascertainment of the facts, by relevant competent and material evidence, so as to insure a fair and lawful conduct and disposition of the case." He has discussed with the medical members every projected matter of procedure or recommendation and has consulted so diligently with the bench that there is at least verbal authority of the court for nearly our entire *modus operandi*.

It has been something of a disappointment with certain individuals that the proceedings have not been further simplified. I believe it has been envisioned that the ideal way would be to have a couple of psychiatrists (more than two might not be expected to agree) make an examination, consult together with a report and consider the matter done.

It is distinctly a new experience for a physician to be placed in the position of actively safeguarding the legal rights of the alleged insane patients.

There has been some comment that the hearing might be even less formal, that the ten-day period after the hearing before definite adjudication is unnecessary. Perhaps so, but a citation from the Barry case, a recent decision of the District Court of Appeals, is interesting in this light.

Let me read you a fragment of the decision of the Court of Appeals in the Barry case.

"Were the legislature to attempt to enact a law authorizing judicial proceedings, the object of which was to affect the person or property of a citizen, without notice or opportunity to be heard, such legislation would be rejected and repudiated in advance as an intolerable outrage upon the rights of the citizen. It would not only be a serious infringement of natural rights, but would be a flagrant violation of the constitutional guaranty that no person shall be deprived of his liberty or property without the due process of law.

"Notice and opportunity to be heard lie at the foundation of all judicial procedure. They are fundamental principles of justice which cannot be ignored. Without them no citizen would be safe from the machinations of secret tribunals, and the most sane members of the community might be adjudged insane and landed in a madhouse. It will not do to say that it is useless to serve notice upon an insane person, that it would avail nothing because of his inability to take advantage of it. His sanity is the very thing to be tried. At the threshold of the inquiry the court is supposed to have no knowledge of the mental condition, but the presumption of the law is in favor of sanity. Insanity, like crime, does not exist in the law until it is established by evidence in a proper proceeding. A trial without notice—a mere *ex parte* proceeding—has no proper place in a court of justice. It is a nullity, and void as affecting those not parties to it."

Many of the above problems were not at first anticipated. We were more prepared for the problems of the mental condition itself. Naturally the lack of definite norms for mental soundness introduces the first variable. The existence of psychoses in their incipiency, or during recovery therefrom, makes decisions less clear-cut, particularly when the patient possesses considerable insight. Again there is conflict of legal rights and psychiatric desirability. To date we have been fortunate in persuading most such individuals to accept treatment without contest.



Familiar to every psychiatrist are the asocial psychoneurotics, the antisocial psychopaths, the paraphrenics, the drifters, the criminally suggestible morons. There have always been such problem cases and the question of their mental unsoundness is always raised. They are asocial, frequently antisocial, but are they psychotic? It depends on one's concept of a psychosis. To date, the Commission has rigidly kept before it the legal concept that "The presumption of the law is in favor of sanity. Insanity, like crime, does not exist until it is established by legal evidence." Insanity or mental unsoundness is a legal term, psychosis a medical one. They do not mean the same. It is quite possible to have a psychosis and be legally sane. The reverse is also true. It is the function of the alienist to harmonize these two viewpoints and in this sense the medical members of the Commission must function as alienists.

We have been forced to give no small amount

of thought to the detection and evaluation of paranoid trends. I feel that many individuals have been unjustly labeled paranoid state or paranoid dementia praecox because they seemed arrogant, irritable or evasive, or were merely misunderstood. "Potentially dangerous" is an overworked term. So are normal individuals dangerous when adequately provoked. I hope there will be discussion on this phase because it is by far the most frequent in contested institutionalization.

In conclusion, I want to state that I am grateful for the opportunity to serve on the Commission in its formative stages. It has been a broadening experience and, while at times onerous, has nevertheless been enjoyable. I consider the rotating service an excellent idea. Perhaps the next intervening nine months will serve as the gestation period of new ideas for a better approach to our problems.

## THE INJECTION TREATMENT OF HERNIA RESULTS IN TWO HUNDRED AND THIRTY-NINE CASES

RALPH J. CARBO, M.D.

*Washington*

In recent years there has been much written on the subject of the injection treatment of hernia. This subject should perhaps be given further thought because of the high percentage of people with hernias who refuse surgery.

Briefly, the injection treatment of hernia dates back a century. Velpeau<sup>1</sup> used it in 1835, Heaton<sup>2</sup> in 1877, Warren<sup>3</sup> in 1811, and Mayer<sup>4</sup> in 1927. Many different irritants were used at that time, such as iodine, Lugol's solution, zinc acetate, phenol and alcohol, etc. Some recent work has been done by Bratrud,<sup>5</sup> Rice,<sup>6</sup> Jameson<sup>7</sup> and Hall.<sup>8</sup> The work reported by me was done intermittently over a period of fifteen years.

Injection of the selected irritant solutions produces both a lymphocytic and leukocytic infiltration, together with fibroblastic proliferation within the first twenty-four hours to five days. Ten days afterward, fibrous tissue begins to form, and within five weeks it is abun-

dant. Repeated treatments, bi-weekly, continue to produce these changes, until there is a complete occlusion of the internal ring and canal. Occasionally swelling of the spermatic cord and scrotum may follow, at which time treatment should be delayed until it is reduced.

### TECHNIC

Success in the injection treatment of hernia depends greatly on a knowledge of anatomy of the hernial structures and a properly fitting truss. The truss should be of flexible steel, which can be adjusted to produce direct pressure over the internal abdominal ring and not the external ring. It should hold the hernia at all times and under all conditions. The patient should wear it for a week under tri-weekly observation before instituting treatment. In the meantime the tender skin will become hardened and a depression remains from the pressure of the truss.



The internal abdominal ring lies midway between a line drawn from the symphysis pubis to the anterior superior spine and about one-half inch to the outer side. This is the most important landmark. The truss is applied directly over this ring and while the patient is in a recumbent position.

It is understood that every hernia is not treated. Good judgment and care must be used in selecting cases. In all cases the hernia must be reducible. Sliding hernias and hernias with undescended testicle are also excluded.

After the patient has worn the properly fitting truss a week treatment begins. The internal abdominal ring is mapped out, as previously described, with the patient in a modified Trendelenburg's position and the hernia reduced. The skin of the area to be injected is shaved and sterilized. A 2 c.c. syringe is fitted with the solution of Sylasol, Neo-Plasmoid or whatever may be chosen, a 21- to a 24-gauge needle being used depending on the thickness of the tissues. With the left finger inserted in the inguinal canal and acting as a guide, the needle is inserted at a slight downward angle, the plunger is drawn back to make sure no vessel is punctured, and the remainder of the solution injected. The needle is withdrawn and the area is massaged gently for a few minutes and the truss applied firmly. This is to be worn day and night for one month, then only during the day for two or three months more. Treatments are continued bi-weekly. When the internal ring is thoroughly closed, injections along the canal are started, and lastly the external ring is closed. The number of treatments varies from 10 to 20. Patients are preferably treated in the evening after work so that they may relax through the night and continue with their duties the following day.

Often a case presents itself in which a truss will not hold. Then it is best to treat the patient in bed for several days, giving larger quantities of solution, and keeping the truss on. Invariably, after a few treatments the truss will hold. Further treatments may be given in the office. The same treatment holds true of umbilical, femoral and postoperative hernias.

#### COMPLICATIONS IN A SERIES OF 239 CASES

Complications, fortunately, are very few and many can be avoided by careful coöperation of the patient and good judgment on the part of the doctor. A few cases show a swelling of the spermatic cord and scrotum. As a rule, this clears up with the application of an ice bag, elevation of the scrotum, and loosening of the truss while the patient is in bed for 48 hours. Treatment is delayed for a week and then resumed in the usual manner. Atrophy of the testicle is rare, although it is found in patients in whom the truss was improperly worn prior to treatment—in all probability, a pressure atrophy. This was found in 3 cases.

Peritoneal irritation due to injection of fluid occurred in 3 cases. In each case the symptoms were acute colicky pain in the lower quadrant, nausea and slight prostration. These were promptly overcome by a hypodermic injection of morphine sulphate. Slight abdominal soreness persists for 72 hours, after which treatment is continued.

Hydrocele occurred in 4 cases during treatment, 2 of which cleared up spontaneously after complete cure was obtained. The other 2 were injected with a solution of phenol, alcohol and tincture of thuja 6 months later and disappeared entirely.

Occasionally a skin infection occurs due to chafing by the truss and improper hygienic care taken by the patient. Treatment then is delayed until the infection has subsided, compound tincture of benzoin being used later to harden the skin.

Since 1921 I have treated 239 cases with a formula containing zinc sulphate, procaine, alcohol, distilled extract of witch hazel, tincture of arnica flowers, and distilled water. Of this number approximately 10 per cent have recurred. It is extremely difficult to keep track of these cases over a period of years. At present I have 9 patients under treatment nearly completed. I am experimenting with various solutions, namely, Sylasol, manufactured by G. D. Searle and Company (6 cases), Neo-Plasmoid prepared by Farnsworth Laboratory

(2 cases), and my original zinc sulphate formula in 1 extremely bad case. The truss did not hold well and it was therefore necessary to produce an excessive amount of exudate around the internal ring. I find that all these solutions give good results.

The ages of my patients varied from 16 to 82 years. The duration of a hernia makes little difference as long as it is reducible. After a cure is completed, the patient is examined every two weeks, being required to wear the truss during the day for two or three months, depending on his occupation and strain. Then he reports monthly for three months and lastly bi-yearly to confirm the cure. If examination reveals a slight impulse, then the patient is subjected to a few more treatments in the usual manner. I must impress that the success in this form of cure depends on these factors: (1) A proper, well-fitting truss which holds at all times and under all conditions, (2) full coöperation of the patient, and (3) a knowledge of the anatomy of a hernia.

There are many advantages of this form of treatment, namely, (1) the patient loses no time from work, (2) expenses are only for treatment and truss, (3) the treatment is not dangerous, (4) all ages can be treated, (5) at any slight tendency to recurrence more injections can be given without hospitalization, (6) if the treatment is unsuccessful, it does not interfere with surgical operation, (7) the patient has very little discomfort, and (8) it obviates dangers that often follow surgery.

The disadvantages that presented themselves in my series were (1) the discomfort of the prolonged use of the truss, (2) the long drawn-out treatment and observation, (3) poor coöperation of some of the patients, and (4) complications mentioned previously.

## CONCLUSIONS

Considering the good results obtained with this method of treating selected cases of hernia, properly managed, the injection treatment should be considered more often as a substitute for surgery. There are certain types of cases that can be safely treated, such as (1) postoperative recurrent hernias, (2) atonic muscle walls in which surgery would not tend to hold, (3) patients too old for surgery, (4) those with some organic ailment that general anesthesia and surgery would jeopardize, (5) patients who cannot afford to stop working, along with added expenditures, and (6) those who fear and dread the knife and its possible complications.

It is true that surgery is the treatment of choice for hernia, and every acceptable patient should be advised to accept an operation. However, many persons refuse surgery who have worn an uncomfortable and improperly fitted truss for years, or who without a truss fear straining or coughing because of the danger of strangulation. Why should a conscientious physician allow such patients to go through life with this abnormal condition when it is his professional duty to alleviate it?

## BIBLIOGRAPHY

1. VELPEAU, M. (1835) cited by MARCY, H. O.: *The Anatomy and Surgical Treatment of Hernia*. New York, Appleton-Century, 1892, p. 272.
2. HEATON, G.: *The Cure of Rupture, Reducible and Irreducible*. Boston, Houghton, 1877.
3. WARREN, J. H.: *Hernias Strangulated and Reducible*. Boston, Thomas, 1881, p. 130.
4. MAYER, I.: *Treatment of Hernia by Subcutaneous Injection*. *M. J. & Rec.*, 1927, 125, 528.
5. BRATRUD, A. F.: *Ambulant Treatment of Hernia*. *Journal-Lancet*, 1933, 53, 673.
6. RICE, C. O.: *Rationale of the Injection Treatment of Hernia*. *Minnesota Med.*, 1935, 18, 623.
7. JAMESON, F. S., AND CANTALA, J.: *Relief of Inguinal Hernia Without Operation*. *M. J. & Rec.*, 1930, 131, 87.
8. HALL, J. S. K.: *Eradication of Hernia by Injections*. *M. J. & Rec.*, 1929, 130, 61.

## THE ROENTGENKYMogram IN CARDIOLOGIC DIAGNOSIS\*

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*Washington*

Roentgenkymography, as utilized by the cardiologist, is a method of recording upon film, in wave form, motion of the heart and large blood vessels. It is a means of recording simultaneous excursions of the various cardiac borders, preferably during one cardiac cycle. The advantages over fluoroscopic examination of the heart are that the roentgenkymogram is a permanent record, time relationships between events occurring in the cardiac cycle can be calculated readily, and the appearance of the various waves can be compared directly with similar waves in other patients. The disadvantages of roentgenkymography in contrast to fluoroscopy are that fluoroscopy reveals cardiac action during consecutive cycles with the entire cardiac outline visible, and that fluoroscopy allows study of cardiac action from numerous angles. Because of the advantages of each of these methods, each supplements the other as an accessory method of studying the heart and thoracic aorta.

In simple form, as used in these observations, the apparatus<sup>1</sup> consists of a lead grid with narrow slits behind which the film moves a distance of 10 mm. Each of the lead strips, 10 mm. in width, is separated from its neighbor a distance of 0.4 mm. The cassette, a heavy wood printing frame, travels behind this grid at a rate of speed determined by the rate of flow of oil from the plunger on which it rests. Since the film moves from a higher to a lower level during registration of the waves, it is obvious, but confusing at first glance, that the wave tracing is read from below upwards. The recorded waves thus represent the lateral motion of a number of points along each border.

The fact that the kymograph records the behavior of only a given number of points on the cardiac borders is demonstrated graphically in the following way. If a heart-shaped piece

of lead<sup>2</sup> is substituted for an actively contracting heart, both "cardiac borders" have a stair-step outline. Since the points undergo no motion, a vertical line is traced, beginning at the intersection of each grid line with the "cardiac border."

The roentgenkymogram in a normal individual appears as follows. The most prominent waves are those along the left and right ventricular borders, with additional clearly demarcated waves in the region of the aortic arch. In the ventricular waves, maximum systole is represented by the trough or most medialward position of the wave, while maximum diastole is the peak or the maximum lateralward position of the wave. In the aortic waves, maximum distention of the aorta corresponding to arrival of the pulse wave is the most lateralward position of the kymograph wave.

Of the various cardiac abnormalities, perhaps the most striking roentgenkymographic picture is produced by constrictive pericarditis. In the case reported by Johnson<sup>2</sup> of a 17-year-old white male who was markedly edematous, but without cardiac enlargement, murmurs, thrill or friction rub, and with a normal electrocardiogram, the roentgenkymogram was the main factor in making the diagnosis which was proved correct at operation. Freeing the heart from its constricting scar tissue not only produced a normal kymogram thirty days after the operation, but also resulted in the patient's return to normal activity.

A less spectacular use of the roentgenkymogram is in the differential diagnosis of vascular from other tumors of the mediastinum. Not only are characteristic waves produced by a vascular tumor, but, as noted by Sosman,<sup>3</sup> changes in size of the mass and character of the waves in vascular tumors frequently follow voluntary increase in intrathoracic pressure.

If a kymogram with only one slit is used, one

\*Read before the Society, October 26, 1938.



can obtain a graphic record of the movement of one point on each of the cardiac borders during many consecutive cycles. This type of study has been carried out by Knox,<sup>4</sup> whose report includes the roentgenkymographic tracings in several types of cardiac arrhythmias. One of his records from a case with extrasystoles arising in the junctional tissue and giving rise to both auricular and ventricular irregularity, demonstrates marked irregularity in excursion of the cardiac borders. In another case included in Knox's report, the cardiac excursion during the abnormally slow ventricular rate of Stokes-Adams disease is demonstrated.

Lesions of the valves are reflected in the roentgenkymogram through changes in the form of the waves and in time relationships<sup>5</sup> between the ventricular and other waves. Just as the patient with insufficiency of the aortic valve presents evidence of quick filling and return to normal of the arteries with each systole and diastole, so the waves of the kymogram show sharp peaks throughout. In well marked aortic stenosis, the ventricular and aortic waves are more rounded than normally.

Advanced stenosis or insufficiency of the mitral valve produces characteristic changes in the ventricular waves. In a typical case of extreme stenosis of the mitral orifice, included in Hirsch's<sup>5</sup> report, the left ventricular waves show little change in contour except for a slight triangular wave during a brief portion of the cardiac cycle. This wave indicates that filling of the ventricle occurs within a very brief time, immediately preceding ventricular systole.

A portion of the cardiovascular system hitherto unapproachable clinically, the pulmonary circulatory system now can be studied by roentgenkymography. Waves in the pulmonary artery and right ventricle can be compared with those produced by the aorta and left ventricle. Studies of the pulmonic circulation<sup>6</sup> show that asynchronism in ejection of blood from the two ventricles occurs not only in abnormal circumstances but also in many cases which apparently are normal clinically.

My own interest in the roentgenkymograms has been concerned chiefly with the contour of

the ventricular waves. In normal young adults one finds that the waves are characterized by well rounded troughs and peaks. With increasing age, there is a change in the relative duration of systolic and diastolic components of the wave. By the age of thirty years, for instance, the instroke portion of the wave is sharper in contour than the outstroke portion. In addition, there is present also a notch about three-quarters along the outstroke wave. These changes gradually become more accentuated, until at the age of 50 years the waves along the left ventricular border vary considerably in contour from patient to patient. Even around that age, however, in certain patients who seem biologically much younger than their stated age, the left ventricular waves are well rounded and the peaks and troughs approach one another in contour. In other cases in which the ageing of the heart has progressed normally, the contour of the left ventricular waves varies within rather wide limits, the margins of the waves occasionally being serrated. In coronary artery sclerosis with precordial pain, similar variations are found in the shape of the ventricular waves.

Correlation of events in the cardiac cycle with the different portions of the ventricular wave of the roentgenkymogram shows a very complex interrelationship. From a study of the ventricular waves, therefore, one is unable to answer the question, "How much work can the heart do?" One can answer, however, the question, "How does the heart do its work?" In other words, study of the to-and-fro piston-like action of the ventricular wall reveals considerable information about the hydrodynamics of cardiac activity.

Study of the instroke phase reveals, for instance, that it occupies from 33 to 45 per cent of the cardiac cycle in normal individuals examined under comparable conditions. The lowest of these values occurs in young individuals, while the highest occurs in middle-aged persons. In each instance the increase is proportional to age. If the instroke phase is further investigated, it is found that the accelerating phase increases with age, and that the



decelerating phase thus occupies a correspondingly smaller but rather constant percentage of the total cardiac cycle. Similar studies probably also can be made for the outstroke phase. Thus, the waves of the left ventricle, as recorded by the roentgenkymograph, provide information at present obtainable by no other procedure. Correlation of this information with the results of other methods of examination remains for future work.

#### BIBLIOGRAPHY

1. WELLER, JR., G. L.: A Readily Portable Roentgen Kymograph. To be published.
2. JOHNSON, S. E.: Roentgenkymograph as New Aid in Diagnosis of Adhesive Pericarditis. *Surg., Gynec. & Obst.*, 1935, **61**, 169.
3. SOSMAN, M. C.: Discussion of Paper "Roentgen Kymography in Diseases of the Heart." *J. A. M. A.*, 1936, **107**, 1954.
4. KNOX, R.: The Investigation of the Movements of the Heart by the Use of the Slit Diaphragm and the Moving Film. *Brit. J. Radiol.*, 1925, **21**, 142.
5. HIRSCH, I. S., AND GUBNER, R.: Application of Roentgenkymography to Study of Normal and Abnormal Cardiac Physiology. *Am. Heart J.*, 1936, **12**, 413.
6. WOLFERTH, C. C., AND MARGOLIES, A.: Asynchronism in Contraction of Ventricles in So-called Common Type of Bundle-branch Block: Its Bearing on Determination of Side of Significant Lesion and on Mechanism of Split First and Second Heart Sounds. *Am. Heart J.*, 1935, **10**, 425.

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### SECOND ANNUAL REPORT OF DIABETIC CAMP

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The second annual diabetic camp for the underprivileged children of Washington was held during the month of August 1938 at the Christ Child Society Convalescent Farm, Rockville, Maryland. The purpose of the camp was not only to regulate the daily routine of each child, but by having this routine as constant from day to day as possible, to make clinical observations which might be of value.

The 5 children ranged from 6 to 13 years of age, representing both mild and severe types of diabetes. Each child's diet was well balanced and at the same time accurately weighed and standardized from day to day. An effort was made to see that the children had sufficient exercise each day and as nearly as possible the same type of exercise.

Blood sugar determinations were made twice a day, 3 days a week; that is, one in the morning before breakfast and a second at 4:30 p.m. These were taken intravenously with hypodermic needles and the determinations made by the micromethod.

Urine specimens were taken before breakfast and two hours after each meal. These were tested for sugar, acetone and acetoacetic acid.

One patient arrived at camp with a boil, and a second child developed one in several days. Healing occurred in both cases and there was only one recurrence. Another patient arrived with impetigo which never entirely cleared in spite of all efforts. A fourth patient had an appendectomy with uneventful recovery, which necessitated a loss of a week. There were no other complications.

The insulin dosages were adjusted frequently on the basis of the urinalyses and even more on the blood sugar levels. There were no severe insulin reactions and no more than 5 reactions in any 1 case occurred during the whole period. Two of the patients were found to have blood sugar values of zero once during the period of the camp and yet were walking about apparently normal.

One patient who had been taking crystalline insulin consistently showed sugar in the fasting urine, a condition which was corrected when protamine zinc insulin was administered instead. This patient had a blood sugar of 300 mg. per cent when receiving 51 units of crystalline insulin; this dropped to 140 mg. when 40 units of protamine zinc insulin was given. On the basis of urinalyses the dosage was raised to 50 units of protamine insulin, and the blood sugar fell to 40 mg. Therefore, less protamine zinc insulin was needed and a better result was obtained than when the crystalline insulin was used. This case also shows what was found in several of the other patients, that simultaneous blood sugar value and amount of urinary dextrose do not coincide, since sugar may be found in the urine when the blood sugar is 62 to 155 mg. per 100 c.c. of blood. Protamine insulin dosages based on these urinary findings alone would result in insulin shock. This finding needs further investigation, but it is the opinion of the writers that protamine insulin probably lowers the renal threshold for sugar. Therefore, sugar in the urine of a patient on protamine zinc insulin has not the same significance as when old insulin was administered. Sugar in the urine below the renal threshold of 160 mg. per cent is exceptional in diabetes.

Four of the patients had their diet divided, receiving supplementary feedings, and 1 was on only 3 meals a day. It was found that these supplementary feedings did not influence the corresponding low value of the blood sugar or the positive urinalyses taken 2 hours after a meal. On several occasions an elevation in the 4:30 p.m. blood sugar was felt to be due to violations of the diet on the part of the children.

All of the children showed less fluctuation in their fasting blood sugar than in the afternoon

ones. One patient showed a drop from 140 mg. to 70 mg., which was out of proportion to the decrease in insulin dosage from 45 to 40 units.

The patient on 3 feedings a day and 27 units of protamine insulin had a blood sugar of zero, while on 20 units of protamine insulin the fluctuation was between 60 and 80 mg.

The patient who had the appendectomy had been receiving 8 units of protamine insulin before the operation. Afterwards, no insulin was needed while the patient was in the hospital on a lower caloric diet. The day after the child returned to the camp on a full diet, the fasting blood sugar was 270 mg., but without any insulin this was down to 150 mg. by 4:30 p.m. The blood sugar remained within normal limits and no insulin was needed up until the time of discharge, which was 2 weeks after the operation. All the other patients were discharged on an increased dosage from that administered when first at camp.

#### SUMMARY

This camp has shown that it is possible to put diabetic children with other children, have them live normally and do well. Upon discharge the average increase in insulin dosage was 9 units from that administered when first at camp;\* the average weight gain 3 pounds;† the average height gain 0.37 inches.

It was found that supplementary feedings did not elevate the blood sugar abnormally after a meal in these patients.

The fluctuations of the "fasting" blood sugar were found to be less than those of the afternoon specimens.

\* This is only apparent, since at home the 5 per cent vegetables were not limited and the method of insulin dosage was different.

† Excluding the case with the appendectomy.

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### THE PRESIDENT'S MESSAGE

#### BIRDS OF A FEATHER . . .

A young doctor, after some years of absence on work and study, returned to the place of his graduation and called upon his Professor of Medicine.

His card was carried in by an old colored man—colored gentleman, I should say, for he was one of that vanishing species; in a few minutes the young man was ushered through a waiting room filled with patients, to be received ambassadorially (?)—well, not quite, but as a gentleman of breeding, culture, and experience would receive one whom he assumed to be his equal in all save the degree A.D. years of our Lord. In a word, as by a gentleman of the old school, and I hope you know what I mean.

Only two things concerning that interview were remembered. The conversation was easy and deliberate, despite the waiting patients, and the professor said: "Doctor, you must identify yourself with the medical profession." Heard indeed, and remembered well, but not understood or comprehended fully till many years later when a homely episode served to illustrate.

The farmer's wife had placed a single goose egg under a setting duck, and in due time one gosling appeared with the ducklings and strolled off with them in the orchard grass. In the evening the gosling "came up missing," as the saying is, but later was found, not in low com-

pany, nor yet with his betters, for he had none, but with the birds of his feather, the geese. The farmer's comment was worthy of Plato for its penetrating observation and truth-searching character. He said, "Doctor, how does he know he is a goose?"

Animals have this advantage over man: they know, and remember, only those things pertinent to their well-being, and are not, like man, confused and distracted by the false and the foolish.

When that gosling stepped off with the geese, "the birds of his feather," his whole personality was behind the decision. He knew neither doubt nor fear, made no mental reservation, had no buried complexes, experienced no anxiety. May we all enjoy an equal degree of equanimity for like reason.

Our many members discharge their obligations to the letter, but some are not fully identified with the profession and do not derive full benefit from the relationship.

Identify yourself with the local profession. ("Identify," cf. Webster: "To become the same; to coalesce in interest, purpose, use and effect.")

Watchword for the New Year:

"Remember the goose that walked with his kind,  
The bird that saved Rome!"

WILLIAM J. MALLORY, M.D.

1939?

The year 1938 has been a significant one for the medical profession of the District of Columbia. In no year have there been such vital issues confronting it, nor has the organization ever been put to such a severe test. It is well, therefore, as we come to the close of the year, to take stock of ourselves to see just where we stand and what the future probably holds for us.

In the course of the year we have learned that nothing is stable and that uncertainty pervades every field of endeavor. This has been exceedingly disturbing to many physicians. However, this is no time for commiseration. We must endeavor to look at the situation as objectively as possible and not



allow ourselves to be swayed by incidents which in the end will have no significance. It is our duty to adhere to the basic principles in which we believe; to abandon them now would have serious implications for the future of both the public and the profession.

We find ourselves confronted at the present time with many legal problems which we shall meet courageously and with confidence that justice will prevail. In so far as the local situation is concerned, only one side of the story has yet been told. It now appears that we are to have our day in court. This is as it should be, and we welcome the opportunity.

During the current year intensive work has been done to lay the groundwork for a sound constructive program. Among the projects now under way are a lay educational program and a medical service plan. In addition, the Constitution and By-laws have been revised to meet changing conditions. It is exceedingly important that these undertakings be brought to a successful conclusion.

It might be said that our efforts in the coming year should be three-fold: (1) To improve our organization, which requires the coöperation of each member and confidence in the Society's leadership; (2) that the projects which have been undertaken and those which are decided upon later be carried forward as rapidly as possible; and (3) that serious consideration be given to introducing and supporting such health legislation as we deem in the public interest.

It is understood that many proposals will be submitted by private and governmental groups in the current Congress which relate to health. These should be studied with great care by our physicians so that they will be fully informed on what the proponents of the legislation have in mind. It is already definitely known that legislation relating to the National Health Program has been formulated. Most of this Program has the approval of the American Medical Association and its constituent bodies. However, the compulsory health insurance scheme, which is part of the Program, is opposed by the medical profession. We believe that experiments in medical service programs which

are now in the process of development by medical societies throughout the country should receive the approbation and encouragement of the government.

What will be the end result of these experiments? No one knows, nor would we care to prophesy. What we do know is that if we have faith in each other and in our leadership and face issues before us courageously, standing by the principles which have guided the medical profession for many hundreds of years, we cannot fail.

The year 1939 will undoubtedly be one of uncertainty. It would seem certain, however, that we can look forward to an interesting, enlightening and profitable experience.

#### A MOMENTOUS DECISION

The rôle of a prophet is a hazardous one, particularly in times as uncertain as the present. However, it would appear that The Medical Society of the District of Columbia, in adopting the medical service program advanced by its Committee on Medical Economics, has made one of the most momentous decisions of its existence. January 4, 1939, the day on which the Committee reported the results of the balloting on its program, may well come to have a greater significance to medical historians of the District of Columbia than is now realized. For on that date the Society announced its determination to depart from the traditional financial relationship with patients of the so-called low income group. Will this decision be cause for regret or will it be proclaimed a wise and forward-looking step?

In our opinion the answer to a great degree lies with the profession itself. It is one thing to approve a program and another to be willing to give it loyal support. Is this fully appreciated by the Society membership? Experience alone will reveal whether members seriously considered the obligations involved in their decision.

Of course, there are other factors which will determine the success of what the Committee frankly states is an experiment. Is there a public demand for the program? That



too is an unknown quantity and time alone will provide the answer.

In its broader aspects the program has a deep significance. One cannot be blind to the fact that changes in medical practice seem probable. That being true, medical organizations are obligated to provide courageous and intelligent leadership. Our Society by its recent action has shown that it is prepared to accept this responsibility.

If its program, with modifications which will

certainly be necessary, provides a sound foundation on which to build, little concern, in our opinion, need be had by physicians for the future. Of course, it is true that events may so shape themselves as to interfere with the continued operation of the Society's program. Even so, the Society, having shown its willingness to experiment with new methods of providing medical care, will be assured an important rôle in developing plans for the future.

A. L. R.

### THE SOCIETY'S PREPAYMENT PLAN FOR MEDICAL CARE

At the Stated Meeting on January 4, 1939, the Society's Committee on Medical Economics announced the vote of the membership on its prepayment medical service program to be known as the Mutual Health Service. In accordance with the action of the Society on October 5, 1938, when basic features of the program were adopted, a copy of the program and a ballot were mailed to each member on December 10, 1938, to be returned within two weeks. Response was prompt, and the number of members returning their ballots exceeded the most optimistic expectations.

The vote was as follows:

519 physicians (out of an Active and Life Membership of 850) had returned their ballots on December 24, 1938.

473 voted for the adoption of the program

44 voted their disapproval

2 ballots returned were not included (one was anonymous and the other did not indicate whether the member approved or disapproved).

A further analysis of the ballots disclosed that of the 473 who voted for the adoption of the program, 343 had no suggestions to make; 130 expressed views on how the program could be improved. Of those disapproving, 18 voted without suggestions and 26 with them.

Since December 24, 10 ballots have been received all approving adoption of the program, 2 with suggestions and 8 without.

In presenting its report the Committee

reviewed criticisms and suggestions offered. Some of the suggestions were incorporated in the program. The Committee emphasized that the program will be of an experimental nature and that it should not be considered a panacea for all problems involved in the medical care of the group to be served. This the Committee stated "would inevitably lead to misunderstanding and loss of confidence. In the course of any experiment changes are inevitable. It is to be expected . . . that some features of the program will be found impractical and will have to be discarded. Others will have to be adopted as experience proves them necessary.

"It is the opinion of your Committee that many difficulties are in store for those responsible for the program's operation. This, too, might be expected in a pioneering venture. Under these circumstances the sympathetic understanding and loyalty of participating physicians are essential."

Because of the length of the report, it cannot be published in full. Copies, however, are available at the Society's office. Members are urged to read the report so as to familiarize themselves with the Committee's work and the problems facing the profession.

The next step to be taken by the Committee is to submit recommendations to the Executive Committee as to the manner in which the program shall be established. This will be done in the next few weeks, perhaps in time for the Executive Committee's action before the

business meeting of the Society February 1, 1939.

Agreements between the organization, physicians, and subscribers will soon be drawn up, and the fee schedule completed. The Committee made it clear that, in voting for the adoption of the program, members had not

agreed to participate. They will be requested to do so only after they have had an opportunity to examine the fee schedule and the agreement.

Description of the Mutual Health Service, including changes which have been made in accordance with suggestions submitted by members, follows.

## MUTUAL HEALTH SERVICE

### INTRODUCTION

The Society's Committee on Medical Economics has labored diligently for the past few months in an effort to effect a workable prepayment medical service program. It has found the undertaking much more difficult and complex than it anticipated. The Committee is now prepared to submit to members of The Medical Society of the District of Columbia a program which it believes worthy of trial. However, it wishes to make perfectly clear that the program is of an experimental nature. Only experience will prove whether the program which the Committee now proposes is medically and financially sound. This will require at least a year. The public should be informed of this fact and that changes may be necessary at the conclusion of that time.

The Committee believes that it has established rules, rates, fees, etc. which are fair to all participants. It recognizes, however, that many details remain to be worked out. These are largely of an administrative nature and can only be developed as the project progresses.

The Committee wishes to acknowledge its indebtedness to Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association, and to Mr. Charles S. Baker, the Society's Legal Counsel, for their assistance. Dr. Leland recently spent several days in Washington, and Mr. Baker has not only attended many meetings but has been called upon to devote much of his time to the legal aspects involved.

It cannot be emphasized too strongly that unless the Society membership is prepared to give its wholehearted and continuous support this project should not be undertaken. It would be a serious thing for the Medical Society to give its approval and then have the program fail for lack of support. It is conceivable that there may not be as great a demand for a prepayment medical service program as is anticipated. However, this can only be determined by trial. The important thing is that the medical profession make a serious effort to meet the apparent needs and demands of the people. The Committee is confident that the program outlined here will succeed (with such changes as may be found necessary following the experimental period) if properly administered and if given adequate support both by the public and by the medical profession.

Before describing the organization which it is proposed shall be the medium through which medical services will be provided to a limited group of citizens, it may be well to set forth in a general way what it is hoped to accomplish.

### OBJECTIVES OF THE PROGRAM

The objectives of the proposed program are as follows:

1. To provide good medical care to subscribers to the program.
2. To guarantee to subscribers free choice of physician, providing the physician chosen has agreed to participate in the program.
3. To coöperate with Group Hospitalization, Inc., to the end that the subscriber be assured medical and hospital care on a monthly payment basis.

### ORGANIZATION

The organization under which the program will operate shall consist of a group of physicians, members of The Medical Society of the District of Columbia, who volunteer to form or to become members of an association for the purpose of administering to the medical and surgical needs of the so-called low-income group. This association shall be known as the *Mutual Health Service*. All physicians, upon joining the *Service*, shall sign an agreement to render services to subscribers during a given period of time, and for stipulated fees.

Members composing the *Service* shall elect a President, Vice President and a Secretary. They shall also elect a Board of Trustees, who shall be responsible to the membership for the business affairs of the *Service*. Because of its legal nature, property of the *Service* will be vested in the Board of Trustees.

### BOARD OF TRUSTEES

Operation of this program shall be under the supervision of a Board of Trustees, consisting of eleven members, a majority of whom shall be physicians. They shall arrange their own internal organization and shall be responsible for the necessary administrative, clerical and other assistance needed to conduct the program, to disseminate information to lay subscribers, to keep records, to supervise the services rendered, and to do all things essential and desirable to make the *Service* func-



tion as intended. The Trustees shall consist of the following members:

1. A member nominated by the United States Public Health Service.
2. Two members nominated by the subscribing group.
3. A member nominated by the District Health Department.
4. Seven members nominated by The Medical Society of the District of Columbia.

The Secretary of The Medical Society of the District of Columbia shall be an ex officio member of the Board of Trustees, without vote.

#### MEDICAL ADVISORY COMMITTEE

The principal function of this Committee shall be to protect the interests of the subscribers to the *Service* and of participating physicians. This will be accomplished in two ways:

1. It will review and decide complaints against patients and physicians.
2. It will review and approve payment of bills submitted by physicians for services rendered to subscribers.

Appeal may be made from the decision of the Committee to the Board of Trustees, whose decision shall be final.

The Medical Advisory Committee shall be composed of three members of The Medical Society of the District of Columbia appointed by the Board of Trustees for the term of one year. Members of the Committee shall receive compensation for their services, the amount to be determined by the Board of Trustees, and approved by the membership.

#### OPERATION OF THE SERVICE

##### ELIGIBILITY TO SUBSCRIBE

Subscribers to the *Service* for the first year of its operation will, of necessity, be limited to—

1. Employed persons under the age of 60 years, in sound body and mind, and no known pending need, with annual incomes of—

\$2,000 or less for single persons, and

\$2,500 or less for husband and wife (combined income), \$200 additional being allowed for each dependent, and

in groups of not less than 10.

If there are not a sufficient number of employed persons in one establishment to form a group of 10, combinations may be formed from various business organizations in the same field to make the required number. At least 70 per cent of the eligible persons of any group must participate.

2. Dependents of the subscriber shall include—

(a) Wife or husband.

(b) Child or legal ward of subscriber under the age of 21 years, who is not in receipt of an income exceeding \$15.00 per week.

- (c) Any other relative of the subscriber who is wholly dependent upon the subscriber for support.

#### MEDICAL SERVICES PROVIDED

Subscribers upon signing an agreement with the *Service* shall be entitled to the following medical services:

1. Surgical, obstetrical and medical care, including office, home and hospital calls.
2. X-ray and laboratory services.
3. Services of an anesthetist.
4. Authorized consultant service.

The cost of services which the subscriber receives under this program in any year shall not exceed \$250.00 for a single person, \$350.00 for husband and wife, \$450.00 for a family. There shall be a \$1.00 registration fee and a one-month probationary period before services for medical conditions will be available. Medical and surgical service will be available at once for disability due to accident. The second payment of dues shall entitle the subscriber to all the benefits of the *Service* with the following exceptions:

#### LIMITATIONS AND EXCLUSIONS

1. The *Service* provides medical service only. Drugs and appliances are not included.

2. Subscribers will not be entitled to obstetrical care or elective surgery for the first 12 months.

3. The first services rendered in each year to a subscriber in the amount of \$5.00 shall be paid by or for the subscriber before the benefits of the *Service* are available to him. This requirement also applies to husband and wife. In the event of illness of either one the payment of the above amount will be required. Where there are dependents \$5.00 shall be paid for the first medical services rendered in the same manner as required of subscribers. However, the amount paid shall apply to the subscriber in the event of his illness.

4. Treatment of the following diseases are excluded from the benefits of the *Service*: mental illness, epilepsy, feeble-mindedness, tuberculosis, syphilis, alcoholism and drug addiction.

5. Also excluded are care for those conditions for which the United States or District of Columbia Workmen's Compensation Acts provide.

6. Finally, the *Service* reserves the privilege of cancellation of agreements for abuse of privileges. However, the subscriber shall be granted a full hearing by the Medical Advisory Committee and the privilege to appeal to the Board of Trustees before his membership is discontinued.

#### DUES

Subscribers shall pay dues monthly on the following basis:



|                                                                                    |                  |
|------------------------------------------------------------------------------------|------------------|
| For a single person . . . . .                                                      | \$1.50 per month |
| For husband and wife (wife<br>will not be accepted with-<br>out husband) . . . . . | 2.50 per month   |
| For family . . . . .                                                               | 3.50 per month   |

The above rates are tentative, but will remain unchanged for a period of one year. Revision may be found necessary at the end of that period.

#### MEDICAL PARTICIPATION

Medical service shall be rendered subscribers by members (Active, Life and Associate) of The Medical Society of the District of Columbia who agree to participate. Physicians living in nearby communities located in Virginia and Maryland who become Associate Members are eligible to render service under this program.

Qualifications of physicians participating in the *Service* shall be determined by their privileges in any hospital approved by the American Medical Association or the American College of Surgeons.

Any participating physician reserves the right to decline to render service to a subscriber and the subscriber in turn is privileged to discharge a physician in the same manner as is now done in private practice.

Physicians participating in the *Service* shall be subject to the same professional and ethical requirements as are set forth in the Constitution and By-laws of the Medical Society and the Principles of Medical Ethics of the American Medical Association.

Physicians participating must agree to conform to the rules for the operation of the *Service*, a copy of which will be provided them, and to lend such assistance as is required to make the plan function efficiently.

Physicians will be provided with certificates bearing their names and indicating their participation, to be displayed in their offices so that subscribers may be assured of their acceptability to the *Service*.

#### SCHEDULE OF FEES

In adopting a fee schedule for medical services, the income level of the group to be served, and the monthly payments of subscribers have been taken into account. Physicians participating in the *Service* will be required to subscribe to the fee schedule, a copy of which will be provided them when the agreement with the *Service* is entered into. The schedule is now in the process of preparation.

#### FINANCING

Because of the lack of data on which to base rates to subscribers for the purchase of medical services on a prepayment basis, subscribers will, as previously stated, be informed that revision of rates after the first year may be necessary. Further, to insure that the *Service* will be financially self-sustaining, it is also proposed that costs necessary for operation shall be the minimum consistent with good service and administration. Physi-

cians participating will be requested to agree to deductions of from 20 per cent to 40 per cent of their fees during the experimental period for the purpose of maintaining a sufficient cash reserve. It is proposed to refund these deductions as soon as it is financially possible.

Establishment of the *Service* will require a cash investment of approximately \$2,500 for the purchase of necessary furniture and equipment and to pay two months' operating expenses. If provided by the Society it will be refunded as soon as possible.

It is contemplated that the *Service* will not begin its operation until there are 5,000 subscribers.

#### TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The meeting of the Washington Society of Pathologists was called to order by the President, Dr. Janvier W. Lindsay, at 1:30 p.m., Saturday, November 5, 1938 in the Army Medical Museum. The minutes of the previous meeting were read by the Secretary, Captain Elbert DeCoursey, and approved. There were 29 members and 2 guests present.

The following were unanimously elected to Associate Membership: Dr. R. F. Golden, Dr. T. L. Perrin, Dr. Benjamin Manchester, Dr. Frank J. Schaeffer, and Dr. William L. Vogt; to Active Membership: Dr. Luther H. Snyder, Dr. Thomas M. Perry, and Dr. O. J. Brown; from Associate to Active Membership: Dr. H. L. Wollenweber, and Dr. T. H. Tomlinson, Jr.

Lieutenant Colonels George R. Callender and A. R. Thomas, and Dr. F. W. Farrar were transferred from Non-resident to Active Membership.

#### Presentation of Cases

**Dr. Oscar B. Hunter** presented microscopic slides from the case of a 40-year-old beauty parlor operator who applied for general examination. A small growth thought to be a sebaceous cyst on the back between the fifth and sixth dorsal vertebrae was noted. The skin over the lesion was slightly pigmented and exfoliating; there was no capsule. A quick frozen section indicated a low-grade fibroneuroma of the neural sheath.

Discussion revealed a general opinion that the tumor was not malignant.

**Dr. E. Clarence Rice** presented 25 microscopic slides from a tumor of the spleen in a colored girl, aged 7 years, who died September 7, 1938. The clinical diagnosis was acute glomeru-

lar nephritis and acute tonsillitis. The patient had been admitted to the hospital August 10, 1938 with the complaints of fever for 1 week, swollen cervical lymph nodes for 3 days, pain in the right axilla for 4 days, vomiting for 3 days, sore throat and muscular pains for 2 days, and general malaise and weakness. Some fine râles were found in the right lung, and a few soft, discrete, non-tender cervical nodes were felt. The liver and spleen became large and tender. An irregular fever up to 105° F. existed. An X-ray film made August 20, 1938 showed an obstruction to the left ureter in the region of the promontory of the sacrum that could not be found at operation one week later. Laparotomy revealed nothing notable (17 days after admission). The white blood count varied from 24,000 to 72,000 with a progressive secondary anemia and with an average of 90 per cent polys. The urine contained white and red blood cells on several occasions, and there were some hyalin casts present on admission. The Wassermann and Kahn tests were negative. The tuberculin P.P.D. test was one plus. At autopsy the sclerae and all the tissues were markedly icteric. The cisternal fluid was clear but yellow. The mediastinal, bronchial, axillary, mesenteric and retroperitoneal lymph-nodes were pea-sized, fairly firm and somewhat hyperemic. The lungs had a shaggy appearance and many match-head-like, elevated, firm gray nodules were scattered over the surface. The lobes were plastered together by fibrous adhesions. The pericardial sac was thick-walled. The visceral and parietal surfaces were covered with a delicate fibrinopurulent exudate giving the picture of the "bread and butter" heart. The myocardium of the heart was flabby and more gray than usual. The omentum was markedly thickened, beefy red, and contained many small firm gray nodules. The liver weighed 950 gm. The surface was covered with numerous gray elevated nodules varying in size from a pinhead to 3 mm. Cut section revealed many similar nodules in the parenchyma. The spleen weighed 470 gm. (about 23 times normal), and its consistency was variable. The appearance of the surface suggested septic infarcts. The Peyer's patches were prominent. The head of the pancreas was firm and nodular. Cut section of the kidneys showed wedge-shaped, somewhat hemorrhagic areas similar to those found elsewhere; the largest of these measured 3.0 cm. at the base. A number of small firm gray nodules were found in the cortex, and several in the mucosa of the pelvis. The anatomical diagnoses were: (1) Newgrowth or Hodgkin's disease, (2) adhesive pleuritis and pericarditis, (3) pyelitis, left, and (4) ascites with peritoneal adhesions. On microscopic examination lymphosarcoma (reticulum cell type) was found.

In the discussion, the difficulty of diagnosis in the lymphatic group of tumors and the necessity of adequate blood cell studies and of reticulum staining of sections were emphasized.

**Dr. Arthur A. Nelson** presented 25 microscopic slides from the case of a white male laborer, 19 years of age. A pigmented papilloma on the right ankle posterior to the external malleolus had been present for several years; it was lacerated by a shovel on September 12, 1938 and removed October 24, 1938, when it was about half the size of a pigeon egg. X-ray studies of the right ankle were negative. The clinical diagnosis was papilloma, pigmented. The microscopic section showed a papillomatous structure measuring 1.5 cm. at the base and 5 mm. in height, consisting of many irregular, elongated

papillae covered by a moderately cornified squamous epithelium, and supported on a very vascular stroma made up of dilated veins with very little intervening connective tissue. The epithelial papillae in the entire section were elongated and narrow, but the basement membrane was intact and no invasion was seen. Scattered throughout the deeper corium and focally connected with the vascular structure of the upper corium, there were about a dozen areas measuring up to 1.5 by 7 mm. consisting of numerous vessels and fewer sweat-glands; toward the edges these masses graded off to normal sweat-glands. In some of the areas the stroma was mucoid in appearance. Focal lymphocyte and plasma cell infiltration was seen, while polymorphonuclears were seen in lesser numbers. The diagnosis given was angiokeratoma.

In the discussion, the consensus was for hemangioma.

**Dr. T. M. Perrin** presented 25 microscopic slides from the case of a white man, aged 55 years, who was admitted to the hospital with the history of illness of 7 weeks' duration, consisting of "stomach trouble," pain in the epigastrium, nausea and vomiting, diarrhea 5 times daily, anorexia and loss of 35 lbs. The red blood count was 4,230,000; the hemoglobin was 58 per cent; the white blood count was 15,400, with 90 per cent polymorphonuclears. The Hinton test was positive. The urine contained a heavy trace of albumin. The clinical diagnosis was Addison's disease or carcinoma of stomach. At autopsy bilateral pulmonary tuberculosis was found. In addition, there were persistent thymus with cystic degeneration, a small healed infarct in the left ventricle, fibrosis of the left adrenal, a hemorrhagic infarct in the lower lobe of the left lung. Microscopically, two roughly triangular-shaped sections of thymus showed an irregularly lobulated structure with sheets of cells separated by coarse fibrous bands. The cells were large, irregularly polyhedral and spindle-shaped, with large round, oval and lobulated nuclei; the cytoplasm was pale, oxyphilic and variable in amount, and although definite intercellular bridges were not seen, there was a delicate fibrillar network connecting the cells. This network did not stain with reticulum stain. Mitotic figures were not seen. In general, the cells seemed to have a very irregular arrangement, but in focal areas there were scattered foci in which small cell nests exhibited concentric lamellation, and in one section the cells were flattened and concentrically laminated about a few dilated lymph spaces. In addition, the cells were roughly columnar in shape and palisaded around the fairly numerous small vessels present. Lymphocytes were scattered about between the tumor cells in small but fairly dense foci in the fibrous strands separating the lobules; in a few foci they appeared to be infiltrating into tumor cell sheets, and were also present in perivascular foci. A reticulum stain showed reticulum in small amounts around vessels and in lymphocyte foci. One small focus of calcification was present in fibrous tissue of one of the sections. The diagnosis was transitional cell carcinoma of thyroid.

In the discussion the possible origins from thymus and thyroid and adenocarcinoma and thymoma were considered.

**Captain R. M. Thompson, M. C.**, presented 25 microscopic slides from a white American-born woman, aged 54 years, who was admitted to the hospital complaining of painless and intermittent uterine bleeding beginning 8 years after the menopause. At times the bleeding was associated with defecation.



She also had noticed a progressive enlargement of her abdomen and complained of fatigue, backache and a dull pain in the lower right abdominal quadrant. Examination revealed a moderately eroded and broad cervix. The uterus appeared greatly enlarged and practically filled the abdomen. A laparotomy was performed and a very large right ovary about the size of a woman's head was removed. The recovery was uneventful. The specimen consisted of a hard, irregular ovoid tumor mass, weighing 1425 grams and measuring 19 by 11 by 15 cm. The tumor was encased in a thick, dense, fibrous capsule which was not entirely adherent to the central core. The parenchyma cut with increased resistance and showed a pinkish-white cut surface containing numerous cysts of varying sizes and shapes. Many of the cysts were filled with a pseudomucinous substance. The microscopic sections showed a dense, highly cellular fibrous stroma surrounding nests or islands of large polygonal, vacuolated, epithelial-like cells containing a distinct rim of cytoplasm. Some appeared finely granular. The nuclei were round, centrally placed and possessed a thin membrane. An occasional distinct nucleolus was noted. Some of the nests showed prominent central liquefaction with cyst formation. Many of the nests were surrounded by a mantle of hyalinized connective tissue. The tumor was not very vascular. The diagnosis was oöphoroma folliculare (Brenner's tumor).

In the discussion it was noted that Meyer states that this tumor arises from special cells which have no relation to the normal tissue structure of the ovary, while Bland states that these tumors arise from Walther's rests of cells in the original germinal layer of epithelium. The diagnosis of this case was first made by Dr. Ewing.

**Dr. C. G. Aronstein** presented the case of a man who had dyspnea for 4 days. Seven months before he had noticed shortness of breath on slight exertion. An X-ray film of the chest showed the lower third of the right pleural cavity to be filled with fluid and rounded areas of increased density scattered throughout both lungs which were thought to represent areas of metastatic malignancy. The patient had repeated thoracenteses which always showed bloody fluid. There was a progressive anemia. At autopsy the right lung was densely adherent. The pleura was markedly thickened. From the level of the fifth rib to the diaphragm there was a large space, partially filled with slightly blood-tinged fluid. The pleural lining of this space was filled with irregular masses of malignant tissue, presenting a yellowish-white color, varying in size from several mm. to 2 or 3 cm. in diameter. Throughout the left lung numerous round nodules were felt which varied in size from 1 to 3 cm. On section they appeared grayish-red and very cellular. The microscopic diagnosis was primary endothelioma of the pleura.

**Dr. R. D. Lillie** presented a microscopic section of liver from Dr. Pinkerton's case of Oroya fever; this case was obtained by Dr. Pinkerton of Peru in the summer of 1937. There was a remarkable grade of proliferation and phagocytosis in the liver. Leishmaniasis was suspected.

**Dr. Henry L. Wollenweber** presented the gross specimen of an unusually large hepatoma of the liver, weighing 6,000 grams.

**Dr. R. M. Choisser** presented the case of a child delivered by low forceps. The mother was approximately 40 years of age and her last previous pregnancy had been 9 years earlier. On the day following birth the child was somewhat cyanotic and this became increasingly evident as time progressed. Later dullness was noted over the left chest and there was marked difficulty with respiration. Some tetany was noted. Calcium gluconate was administered together with glucose and various cardiac and respiratory stimulants. The heart sounds, which had been relatively normal, were later changed so that there seemed to be just one sound. The child became progressively worse. The temperature rose to 103° F. The cyanosis increased continuously, and the child died suddenly. The respiratory rate terminally was 70 per minute. The heart was very markedly enlarged, only two-chambered, with complete absence of the interventricular septum, and the coronary arteries arose from the right atrium and pulmonary artery anterior to the aorta.

The meeting adjourned at 3:45 p.m.

## CALENDAR FOR COMING MEETINGS

**Wednesday, January 25:** Panel Discussion on Chronic Bronchitis and Bronchiectasis. William D. Tewksbury, M.D., Chairman.

"Pathology, Gross and Microscopic." O. B. Hunter, M.D.

"Bronchoscopic Diagnosis and Treatment." William H. Jenkins, M.D.

"X-Ray Treatment." Arthur C. Christie, M.D.

"Medical Treatment Including Evaluation of Use of Guaiaicol and Other Modalities." William D. Tewksbury, M.D. and E. Raymond Fenton, M.D.

"Surgical Treatment." Edgar W. Davis, M.D.

**Wednesday, February 1:** Business Meeting.

**Wednesday, February 8:** The following program will be presented by the *Section on Gastroenterology*:

"The Clinical Importance of Deficiency States in Gastroenterological Diseases." H. L. Bockus, M.D., Philadelphia.

"Gastrointestinal Expression of Neuropsychiatric Diseases." Antoine Schneider, M.D.

**Wednesday, February 15:** Program to be furnished by Pan American Medical Association.

**Wednesday, February 22:** No meeting.

**Wednesday, March 29:** Program under the auspices of the Washington Academy of Surgery. Arthur E. Hertzler, M.D., has been invited to speak. Subject: "Surgery of Cardio-toxic Goiter." Dr. Hertzler, the "Horse and Buggy Doctor," has won wide acclaim both by the medical profession and the general public. Note this date on your calendar.

## MEMBERSHIP

The following were duly elected to membership at the stated meeting January 4, 1939:



*Active Members*

Ellis April, 2000 Klinge Road, N.W.  
 Emil Herbert Bauersfeld, 17 Dupont Circle  
 J. Roscoe Creer, 308 Farragut Medical Bldg.  
 Herbert Harold Diamond, 1401 Tuckerman St., N.W.  
 Samuel Diener, 3504 Connecticut Ave.  
 Paul Eanet, 4847 Illinois Ave., N.W.  
 Charles Edward Fierst, 2701 14th St., N.W.  
 Melville Bendheim Fischer, 1801 Eye St., N.W.  
 Ray F. Gynn, 1616 16th St., N.W.  
 Lester Wilbur Harris, 35 New York Ave., N.W.  
 Malcolm Douglas Harrison, 4540 49th St., N.W.  
 Vincent Brewer Hungerford, 3500 14th St., N.W.  
 Richard Lee Jackson, 116 East Chestnut St., Alexandria, Va.  
 Ruth Jackson, 5404 Illinois Ave., N.W.  
 Joseph Ralph Jordan, 1355 Longfellow St., N.W.  
 Henry Marshall Lowden, 4603 Illinois Ave., N.W.  
 E. Parker Luongo, 203 Maryland Ave., N.E.  
 Raymond Maret, 1291 Brentwood Road, N.E.  
 Reginald Henry Mitchell, 2002 R Street, N.W.  
 Charles Marion Musso, 1150 Connecticut Ave., N.W.  
 Carolyn Hannah Snyder Pincock, 1801 Calvert St., N.W.  
 Murry M. Robinson, 802 Farragut Medical Building  
 Samuel Shwartz, 1750 M St., N.W.  
 Carl Silverman, 1711 Rhode Island Ave., N.W.  
 Siegfried Speyer, 1800 K Street, N.W.  
 Lewis Kaigler Sweet, Gallinger Municipal Hospital  
 Paul Robert Wilner, 1835 16th Street, N.W.

*Associate Members*

Edgar Deucher Griffin, 108 East Glenbrook Road, Bethesda, Maryland  
 Martin Barbour Hiden, P. O. Box 222, Warrenton, Virginia

The following applicants for membership will be voted on at the stated meeting March 1, 1939:

*For Active Membership*

Robert S. Coffey, Georgetown University—1932  
 Abe M. Cohen, George Washington University—1935  
 Philip Augustus Degnan, Georgetown University—1934  
 Edward Thomas Gary, George Washington University—1931  
 Bernard J. Gurwin, George Washington University—1926  
 William Allen Howard, Tulane University—1934  
 Naomi Marilyn Kanof, George Washington University—1934  
 Ernest James Parent, George Washington University—1935  
 John Howell Peacock, Jr., Emory Medical School—1934  
 Aaron S. Schwartzman, George Washington University—1930  
 Richard F. Shaw, Georgetown University—1928  
 Joseph Washington Stein, University of Tennessee—1934  
 Roy A. Thornley, Georgetown University—1914

*For Associate Membership*

William Landon Brent, University of Maryland—1906  
 Kenneth Francis Laughlin, Georgetown University—1935  
 Thomas Martin Peery, Medical College of State of South Carolina—1932  
 Harold Renaud Reed, Jefferson Medical College—1915

John Wix Thomas, II, University of Southern California—1938

Recent changes in membership status:

*Active to Associate*

Aaron Harry Gerber

*Resigned*

*Active Members*

Spencer Vincent Meade  
 Robert Cathcart Ransdell

Dropped, pursuant to provisions of Chapter IV, Article V, of the Constitution:

*Active Members*

Homer K. Butler  
 Austin B. Chinn  
 \* Aloysius J. B. Connolly  
 Edmund M. Ellerson  
 \* James A. O'Keeffe  
 \* Howard F. Strine  
 \* George W. Warren

*Associate Members*

Alfred T. Bronaugh  
 Knud Knud-Hansen  
 Marion T. Rosser  
 Othmar Solnitzky  
 Clifton E. Young

\* Reinstated upon payment of dues

**Nine New Life Members**

Chapter II, Article IV, of the Constitution of the Society, reads as follows:

Life members shall be active members who have been active members for a total of forty years. They shall have all of the privileges of active membership and shall be exempt from paying dues and assessments.

Our honor roll now numbers 57. The congratulations of the Society are extended to:

| <i>Seniority Number</i> |                       | <i>Date of Membership</i> |
|-------------------------|-----------------------|---------------------------|
| 230                     | Joseph Milton Heller  | April 28, 1898            |
| 231                     | Edmund Barry          | April 6, 1898             |
| 232                     | John Benjamin Nichols | April 14, 1898            |
| 233                     | Joseph Stiles Wall    | April 9, 1898             |
| 234                     | DeWitt C. Chadwick    | April 12, 1898            |
| 236                     | Grafton D. P. Bailey  | April 18, 1898            |
| 240                     | William Gerry Morgan  | October 10, 1898          |
| 242                     | L. Fleet Luckett      | October 13, 1898          |
| 244                     | Charles E. Ferguson   | October 20, 1898          |

who have for forty years been on the roster, meeting all dues and assessments and lending their support to the Society by frequent attendance. Their status is now elevated to Life Membership

## NEWS AND PERSONALS

**The Woman's Auxiliary to the Medical Society of the District of Columbia** voted to contribute the proceeds of its first benefit to needy doctors in the local Society. A check for \$179.00, representing the amount raised at the benefit, has been received by the Society from the Auxiliary. At its business meeting on January 4, 1939, the Society voted to extend its appreciation to the Women's Auxiliary for this contribution.

**The George M. Kober Medical Society**, at its meeting January 16, heard an essay by Dr. William F. Burdick entitled "Premature Infant." Dr. Claude Moore presented "A Case of Anencephalus Diagnosed Prenatally."

**Dr. William D. Gill, Jr.**, entertained twenty guests at dinner at the Mayflower Hotel in honor of **Dr. Henry Joseph Tumen** of Philadelphia before the meeting of the Section on Gastroenterology December 12. Dr. Tumen addressed the Section on the subject, "Liver Function, Biochemical Consideration and Clinical Application."

"**Beaumont and St. Martin**," the first of six large paintings in oil memorializing "Pioneers of American Medicine" which the artist, Dean Cornwell, will complete in the next few years, is available free to physicians. These full color reproductions, without advertising and suitable for framing, are being distributed by John Wyeth and Brother of Philadelphia. Requests will be received directly by the Secretary of the Society.

**A Committee on Cancer Control** has been appointed by the President, Dr. William J. Mallory, with the following personnel:

Dr. Eugene R. Whitmore, Chairman  
 Dr. Edith Seville Coale  
 Dr. Harry H. Kerr  
 Dr. Radford Brown  
 Dr. William J. Stanton  
 Dr. Daniel L. Seckinger

The Committee will hold a meeting to lay its plans for a Cancer Control Campaign, which will be carried on in coöperation with several public and private health agencies and women's organizations. A definite date for the beginning of the campaign will be set at the meeting, following which details also will be announced.

**The Washington Academy of Surgery** held an informal dinner meeting on October 14, at which time Dr. George Crile, Jr., of Cleveland spoke on "The Management of Severe Hyperthyroidism and the Bad Risk Case," illustrated with lantern slides.

At a dinner meeting December 9 the Academy was addressed by two physicians from Baltimore. Dr. J. M. T. Finney, Jr., spoke on "Diverticulitis and Diverticulosis of the Small Intestines" and Dr. George G. Finney's subject was "Treatment of Acute Empyema." Both talks were illustrated with lantern slides.

The following officers are serving this year:

Dr. Daniel L. Borden, President; Dr. Fred R. Sanderson, Vice President, and Dr. J. Ogle Warfield, Jr., Secretary-Treasurer.

**The Southern Safety Conference**, which will meet in Jackson, Mississippi, February 16 and 17, recognizing the value of industrial medicine in any efficient industrial safety regime, has invited two physicians to participate. Dr. J. R. Garner, Chief Surgeon of the Atlanta and West Point Railroad Company of Atlanta, Georgia, will speak at the afternoon session February 17 on "Industrial Medicine for Large and Small Plants," and Dr. Donald M. Shafer of the National Association of Manufacturers will address the physicians' banquet in the evening.

**Mississippi Valley Medical Society 1939 Essay Award.** The Mississippi Valley Medical Society offers a cash prize of \$100, a gold medal and a certificate of award for the best unpublished essay on a subject of interest and practical value to the general practitioner of medicine. Entrants must be members of the American Medical Association. Contributions must not exceed 5000 words, be typewritten in English in manuscript form, submitted in five copies, and must be received not later than May 1, 1939. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Burlington, Iowa, September 27, 28, 29, 1939, the Society reserving the exclusive right to first publish the essay in its official publication, the Mississippi Valley Medical Journal. Further details may be secured from Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

**The Board of Directors of the American Medical Women's Association** held their mid-winter meeting



in the Society's library December 3, 1938. Dr. Kate B. Karpeles, National President, presided over the meeting. Other officers, also members of the local Society, are Dr. Elizabeth Parker, Secretary, and Dr. Elizabeth Kittredge, Executive Secretary.

Respecting the status of women "when and if their services are used by the U. S. Army in time of war," the Board went on record in a resolution urging Congress "in the best interests of the national services" to change existing legislation so that such services, which will undoubtedly be called for in any great national emergency, be placed upon the same basis as similar services performed by men, and that women officers be commensurately commissioned in the Army.

Following the meeting, Dr. Karpeles entertained at a buffet supper at her residence, and on Sunday the Board was entertained informally by the Women's Medical Society of the District of Columbia, headed by Dr. Elizabeth Chickering, President, and Dr. Alma Jane Speer, Chairman of Hospitality.

#### **American Board of Obstetrics and Gynecology.—**

The general oral, clinical and pathological examinations for all candidates, Part II Examinations (Groups A and B), will be conducted by the entire Board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Notice of time and place of these examinations will be forwarded to all candidates well in advance of the examination dates. Candidates for reexamination in Part II must request such reexamination by writing the Secretary's Office before April 1, 1939. Candidates who are required to take reexaminations must do so before the expiration of three years from the date of their first examination. Application for admission to Group A, May 1939, examinations must be on file in the Secretary's Office by March 15, 1939. Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, (6) Pennsylvania.

#### **Medical Motion Pictures Available for Loan.**

The American Medical Association has a number of motion pictures on various scientific subjects available for loan. The material falls into two classifications. Those available for medical societies and other scientific organizations include such

subjects as syphilis, cancer, blood circulation, blood transfusion, physical therapy, muscle training and massage. Motion pictures for the public include the following subjects: "A New Day," "Prevention of Burns" and "Men of Medicine."

Reservations for films should be made as far in advance as possible, giving exact shipping instructions, dates for showing, and type of apparatus to be used, since the American Medical Association does not have projectors available for loan. Responsibility for the projection and care of the film must be borne by the individual or organization borrowing it. Otherwise, the only expense incurred is that of transportation both ways.

Description of films available and other details may be secured by writing to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Ill.

**The American Board of Ophthalmology** announces an important change in its method of examination of candidates for the Board's certificate.

Examinations will be divided into two parts. Candidates whose applications are accepted will be required to pass a written examination which will be held simultaneously in various cities throughout the country approximately 60 days prior to the date of the oral examination. The written examination will include all of the subjects previously covered by the practical and oral examinations.

Oral examinations will be held at the time and place of the meeting of the American Medical Association and of the American Academy of Ophthalmology and Oto-Laryngology, and occasionally in connection with other important medical meetings. The oral examination will be on the following subjects: External Diseases, Ophthalmoscopy, Pathology, Refraction, Ocular Motility, Practical Surgery.

Only those candidates who pass the written examination and who have presented satisfactory case reports will be permitted to appear for the oral examination.

Examinations scheduled for 1939: Written, March 15 and August 5; Oral, St. Louis, May 15; Chicago, October 6. Applications for permission to take the written examination March 15 must be filed with the Secretary not later than February 15. Application forms and detailed information should be secured at once from Dr. John Green, Secretary, 6830 Waterman Ave., St. Louis, Mo.



**The Seventh Annual Post-Graduate Clinic of The George Washington University School of Medicine** will be held on February 18, 1939. Important developments in all branches of medicine will be covered, as shown by the following partial list of papers to be presented:

- "The Establishment of a Blood Bank." Charles Stanley White, M.D.
- "Torsion of the Spermatic Cord." Francis R. Hagner, M.D.
- "The Smith-Peterson Nail in Intracapsular Fractures of the Hip." Custis Lee Hall, M.D.
- "An Analysis of the Proprietary Tragedy—'Elixir of Sulfanilamide'." George B. Roth, M.D.
- "Medical Management of Peptic Ulcer." Albert J. Sullivan, M.D.
- "Prevention of Cyanosis of Sulfanilamide." Alan Hisey, M.D.
- "The Use of New Chemotherapeutic Agents in the Treatment of Lobar Pneumonia." Theodore J. Abernethy, M.D., and Harry F. Dowling, M.D.
- "Popular Misconceptions in the Management of Patients with High Blood Pressures." Walter A. Bloedorn, M.D.
- "Treatment of Tabes Dorsalis: Review of 900 Cases." (By Invitation) Paul Padget, M.D., Baltimore
- "Roentgen Therapy in Puerperal Mastitis." Joseph L. Elward, M.D.

There will also be scientific exhibits. In addition the A. F. A. King Obstetrical Society will present a Symposium on Obstetrics and Gynecology on February 17, the day before the Post-Graduate Clinic.

The Post-Graduate Clinic Committee extends a cordial invitation to members of The Medical Society of the District of Columbia, members of medical societies of neighboring states, officers of the Army, Navy, Veterans Bureau and the U. S. Public Health Services.

The personnel of the Post-Graduate Clinic Committee is as follows:

Dr. W. Warren Sager, Chairman, Drs. Arch L. Riddick, J. Kotz, H. S. Hoffman, Roger M. Choisser, Paul F. Dickens, Arnold McNitt, H. J. R. McNitt, and George W. Creswell, Secretary.

**Georgetown University's Public Health Forum** will be conducted for the second year beginning February 2. Forum meetings will be held at Gaston Hall, Georgetown University, at 8:30 p.m. each Thursday evening and will continue for six weeks.

Radio programs will also be broadcast on Wednesdays preceding the Forum over the Mutual Network (WOL) at 10 p.m. The February schedule for the radio programs and Forum meetings is as follows:

#### *Radio*

- February 1: Child Welfare and Immunizations
- February 8: Crippling Conditions in Children
- February 15: Problem Children
- February 22: Better Teeth

#### *Forums*

- February 2: "Child Welfare." Ella Oppenheimer, M.D.
- February 9: "Crippling Conditions in Children." Custis Lee Hall, M.D.
- February 16: "Problem Children." J. Edward Routh, M.D.
- February 23: "Common Household Poisons." Fred Sanderson, M.D.

**The ceremony of breaking ground for the erection of Doctors' Hospital, Inc.,** took place on January 9 at the site of the new structure on Eye Street between Eighteenth and Nineteenth Streets, N. W. The following remarks were made at the ceremony:

**Dr. Oscar B. Hunter**, Secretary of Doctors' Hospital, Inc.: "Mr. President, we are gathered here today to fulfill a long cherished desire to begin the construction of the Doctors' Hospital. On behalf of the Board of Directors of the Hospital Corporation, I take pleasure in informing you that we have complied with all the necessary legal and financial requirements and I have the honor to present to you this spade for the purpose of breaking the ground, the first step in the construction of the hospital on this site."

**Dr. Charles Stanley White**, President of Doctors' Hospital, Inc.: "Mr. Secretary and friends: It gives me pleasure to accept this implement and to use it as you have designated. Breaking ground for the erection of the Doctors' Hospital marks a milestone in the medical annals of the District of Columbia. Such an institution as we contemplate is not merely a wish or a fantastic dream, but rather the fulfillment of a desire that had its inception about fifteen years ago.

"When the Washington Medical Building was completed in 1925, it became the hope of those interested that another medical building would follow and eventually the two would be joined by a hospital, thus establishing a center for medical activities. With the completion of this hospital, the wish will become a reality.

"To build a hospital was not a hasty decision. We were prompted by many motives, the chief of which was to furnish the best hospitalization possible compatible with the expense to be borne by the prospective patient. We asked ourselves if more hospital beds were needed in Washington and, fur-

ther, if a hospital could be self-sustaining, without appeals for public contributions. After a thorough and unbiased survey, we made a definite decision: we decided to build.

"A well conducted hospital is an asset to any community. To the other hospitals in Washington already in operation, we state that we propose to coöperate, not to compete, in taking care of the sick. Abundant experience in the past two years proves beyond doubt that the hospitals of this city have been running at capacity and at times were unable to care for all who have applied for admission. Pre-payment hospitalization plans have probably been responsible for the large number of persons seeking hospital care, but we look for an increase rather than a decrease in such a demand. Do not forget that our city is growing and will reach a population of 900,000 during the lives of some of us standing here.

"We believe that a hospital devoted solely to private patients can be self-supporting. We heartily approve of medical charity, but we do not believe that charity patients should be supported by the income derived only from private patients. The person who is unfortunate enough to become ill should not be expected to contribute to the support of the indigent. That is the responsibility of the municipality and not the duty of a small percentage of our citizens. Philanthropy is not outmoded; there will be much charity under the roof of this hospital, but it will be in the nature of medical service. We expect to conduct the institution on a sound business basis, even to paying all the taxes to which corporations are heir.

"Something should be said about our professional policy. This institution will become in no sense a closed hospital. It shall be open to every physician whose ethical, professional, and moral reputations meet the standard we shall establish, and almost every licensed physician should be able to qualify. We shall, however, reserve the right to reject those who do not meet our standard.

"A training school for nurses will not be conducted. The nursing will be done exclusively by graduate nurses, rigidly supervised. Nurses' aides will be provided, and possibly a training school for nurses' aides may eventuate.

"As we visualize the entire group of buildings we are impressed with its possibilities. Here we have a hospital, modern in every detail, well equipped and efficiently staffed, physically connected on either side by office buildings which house the ablest physicians, surgeons, specialists, dentists, and others

in allied arts, with parking facilities immediately opposite. This approaches our ideal as a place to work.

"We realize that this undertaking to a group of physicians is of considerable magnitude, but we have faith in ourselves and know that we shall receive the support of those who stand for progress in medicine."

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### **Phebe Russell Norris, M.D.**

(1860-1938)

Dr. Phebe Russell Norris, a Life Member of The Medical Society of the District of Columbia, died December 10, 1938, at her residence at the Iowa Apartments, Thirteenth and O Streets, N.W. She was forced to retire from practice twelve years ago due to illness.

Dr. Norris was born in Monrovia, Maryland, in 1860. She received her premedical education at Juniata College, Huntingdon, Pa., and her medical degree from the Columbian Medical College in Washington, now George Washington University. She began practicing medicine in the District in 1892.

Two sisters survive, Mrs. Florence Norris Moomaw and Miss Laura Norris, both of Chevy Chase, Maryland.

### **William Cabell Rives, M.A., M.D.**

(1850-1938)

Dr. William Cabell Rives, an Active Member of The Medical Society of the District of Columbia since 1907, died at his home at 1702 Rhode Island Avenue, N.W., December 17, 1938.

Dr. Rives was born in Paris in 1850 while his grandfather was serving a second term as Minister to France. He graduated from Harvard University in 1871, and from the University of the City of New York in 1877, where he received his degree in medicine. He also studied at Corpus Christi College, Oxford, and Vienna. Returning to America to practice, he served for many years in hospitals at Newport, Rhode Island, and in New York. In the latter city he became associated with the Right Reverend Henry Yates Satterlee, first Bishop of Washington.

Upon coming to Washington in 1900, Dr. Rives gave generously of his time, energy, and funds to various philanthropic organizations. These organizations included the Washington Cathedral, Church of the Ascension, the Episcopal Eye, Ear



and Throat Hospital, St. Anna's Episcopal Home, the Episcopal Home for Children, the Home for Incurables and other institutions. He attended the poor of the city with financial and medical aid alike. He was a trustee of the Associated Charities and a notable benefactor of the Community Chest.

In 1876 Dr. Rives married Mary Rhinelander Sears of Boston, who preceded her husband in death.

### **John Sheridan Arnold, M.D.**

(1865-1939)

Dr. John Sheridan Arnold, an Active Member of The Medical Society of the District of Columbia, died at his home at 5000 Illinois Avenue, N.W., January 6, 1939, following an illness of several months. Dr. Arnold was elected to membership in the Medical Association of the District of Columbia in 1903 and became a member of the present Society in 1907.

Dr. Arnold was appointed school medical inspector for the District of Columbia Health Department in 1903, which office he retained for thirty-two years. Most of his work as medical inspector was done in the schools in Southeast Washington. For many years he was a familiar figure around Capitol Hill with his horse and buggy, but he was one of the first physicians to adopt the automobile.

Dr. Arnold was born in Port Trevorton, Pa., in 1865. Directly after graduating from the College of Physicians and Surgeons in Baltimore, he began practice in the District of Columbia. He was a member of the Washington Board of Trade, the New Jerusalem Lodge of Masons and the Kallipolis Grotto, and for a number of years he was vice-president of the Pennsylvania State Society.

Three sisters survive Dr. Arnold, Miss Isora Arnold, Mrs. W. S. Lenhart and Mrs. Ida Bingham, all of Port Trevorton.

### **James Wallace Esler, A.B., M.D.**

(1894-1938)

Dr. James Wallace Esler of 2737 Devonshire Place, N.W., prominent cardiologist, died December 15, 1938, after an extended illness. He was one of the younger members of The Medical Society

of the District of Columbia, having been elected to Active Membership in 1929.

Dr. Esler was born in Tarentum, Pennsylvania, in 1894. He received his academic degree from Washington and Jefferson College and his degree in medicine from the University of Pennsylvania in 1920. He began practicing in the District in 1928.

Dr. Esler was a member of the American Medical Association, the Clinical Pathological Society of Washington, and the American College of Physicians. He served as secretary and later as president of the Washington Heart Association. He was a professor of clinical cardiology at the Georgetown University and a former member of the Allegheny County Medical Society (Pittsburgh).

Surviving are his widow, Mrs. Lillian Esler; a son, James Wallace Esler, Jr., and a brother, Russel J. Esler.

### **Maurice Erwin Miller, M.D.**

(1868-1938)

Dr. Maurice Erwin Miller of 3600 Edmunds Street, N.W., died December 15, 1938, in Albuquerque, New Mexico, following an illness of about three weeks. Dr. Miller was a former member of The Medical Society of the District of Columbia, having been elected to Active Membership in 1898, and retained his membership for thirty-two years.

Dr. Miller was born in Reading, Pennsylvania, in 1868 and graduated from Jefferson Medical College in 1896. He began his practice as an eye specialist in the District in 1900 and had been associated with the late Dr. William H. Wilmer at the Episcopal Eye, Ear and Throat Hospital. After retiring from active practice in 1930, he served as adviser to the Africa-Inland Commission in the Belgian Congo for a year and a half. Dr. Miller was president of the Gospel Mission in Washington and past president of the Washington Medical and Surgical Society.

He is survived by a son, Dr. Beveridge Miller, two sisters, Mrs. Frank Stetson and Mrs. G. Edwin Rowland, all of Washington, and two brothers, Charles E. Miller of Washington and Claude E. Miller of Sparkill, New York.



# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

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### OBSERVATIONS ON THE USE OF CHAULMOOGRA OIL IN ARTHRITIS

CAMP STANLEY, M.D., F.A.C.S.

*Washington*

Apparently we are indebted to William Roxburgh, a Scotch botanist and physician of the eighteenth century who sojourned for many years in India, for the original description of *Gynocardia odorata*, or chaulmoogra, and the earliest report of its employment as a therapeutic agent by the natives of that country. Before leaving India in 1813 Roxburgh entrusted to his friend, William Carey, then curator of the Calcutta Botanic Garden, one of two copies of his manuscript entitled "Flora Indica," a complete edition of which was published by Carey at Serampore in 1832. From the excellent account presented by Roxburgh<sup>1</sup> in this work, we learn that the species of tree which furnishes the drug known as chaulmoogra is indigenous to certain regions of India, attains a size equal to the largest mango trees, and when fully grown is comparable to the great maple or sycamore. The chaulmoogra tree blossoms in April and May. The seeds, which ripen toward the end of the year, are carefully removed from the fruit, dried, and after being freed from integuments are beaten up with clarified butter into a soft mass and applied thrice daily to affected parts for the cure of diseases of the skin and rheumatic joints.

In 1854, Frederic John Mouat,<sup>2</sup> a British army surgeon attached to the Bengal Medical Service, and formerly a professor of materia medica in

the local college of medicine, invited the attention of practitioners in the western hemisphere to the remarkable efficacy of oil expressed from seeds of chaulmoogra in the treatment of leprosy, for which it had long been known and esteemed by the Indians. The crude oil dispensed at that time through native bazaars is described by Mouat as bland, with a peculiar, slightly unpleasant odor and flavor somewhat suggestive of bitter almond. Mouat also records complete histories of 3 cases of leprosy treated successfully by other physicians with pills prepared from seeds beaten into a pulp, administered at the rate of one to two pills of 6 grains each, 3 times daily, and daily dressings of ulcers with the oil. In conclusion, Mouat refers briefly to his own employment of the oil in 3 cases of so-called syphilitic rheumatism, with apparent benefit in every instance.

Bentley and Trimen<sup>3</sup> in their comprehensive treatise on medicinal plants devote a paragraph to the medical properties and uses of chaulmoogra seeds. Pills of 6 grains each as well as oil in doses of from 5 to 6 drops, given 3 or 4 times daily and increased gradually until they cause nausea, are declared by these writers to have proved effective in the treatment of rheumatism. It has been my experience that any quantity of crude oil will produce nausea and vomiting promptly. The enteric-coated globule

of 3 or 5 minims is best tolerated, provided no oil seeps through a cracked globule.

In a monograph published in 1880, Thomas Christy,<sup>4</sup> the English medical botanist and lexicographer, recommended that chaulmoogra oil be liquefied by heat and rubbed well into the affected parts in rheumatic gout and rheumatism. He likewise advised that a capsule containing 5 drops of the oil be taken on one night, 2 capsules on the next night, and, in cases of long standing, another capsule of 5 drops after the midday meal. Christy in his turn reported 4 cures obtained with this method of treatment, 3 involving cases of rheumatism, and 1 of rheumatic gout. Two additional cures of several rheumatism cases, 1 in a patient so profoundly afflicted as to appear permanently bedridden, were recorded by Christy in a second edition of his brochure issued in 1884.<sup>5</sup>

Lay testimony of the almost miraculous virtue of chaulmoogra oil against rheumatism and rheumatic gout is expressed in a letter from a grateful patient, excerpts from which are quoted by the unknown writer of an editorial<sup>6</sup> published in 1881 in the *British Medical Journal*. According to the account, within three hours after the application of the oil to the hands in a severe acute attack of rheumatism, function was restored, and there was no subsequent recurrence of the intense pain.

However, following its introduction into the therapeutic armamentarium of the western world, chaulmoogra oil speedily proved a sovereign remedy for leprosy, and its efficacy in the cure of cutaneous, rheumatic, and other diseases was for a time quite eclipsed by the brilliant results obtained from its administration to lepers. It is now generally assumed that certain fatty acids of the oil, notably chaulmoogric and hydnocarpic acids, are specific in their action upon Hansen's bacillus, and the modern empiric therapy of leprosy is based upon that hypothesis.

Naturally, in view of the above fact the few scattered references to the use of chaulmoogra oil in rheumatic affections which we have cited attracted little or no attention, and thus were

either ignored or forgotten. Hence, our actual chronicle of the treatment of arthritis with chaulmoogra oil dates only from 1926, when McIlhenny,<sup>7</sup> the chief orthopedic consultant at our largest national leprosy, recorded the interesting observation that the secondary infectious type of arthritis is not found in lepers who have previously received the oil. Since inquiries addressed to members of the staff of his own and other leproseries served only to confirm his original observation, McIlhenny concluded ultimately that chaulmoogra oil was responsible for the prevention of that particular form of an almost universal malady.

Accordingly, administration of the drug to arthritic patients was commenced in 1930. One year and a half later, McIlhenny announced the results of the purely empirical treatment of 39 patients, 29 from his own and 10 from other services, all of whom presented positive radiologic evidence of the atrophic, hypertrophic, or mixed type of arthritis.<sup>8</sup> These patients were given bi-weekly intramuscular injections of from 3 to 5 c.c. of crude chaulmoogra oil combined with olive oil in proper proportion, and from 0.3 to 1.6 c.c. in enteric capsules orally at meal times. Injections at body temperature were made alternately into the gluteal and deltoid muscle. A 2-inch spinal needle was employed, and care was taken to avoid the fascial planes or periosteum in order to prevent the development of a sterile abscess. Of these patients, many are said to have exhibited relief from all symptoms with restoration of function, while in others the disease was checked and the deformity minimized. There was no return of the pathologic condition in any of them. From his supervision of this group McIlhenny learned that improvement may be expected during the second week of treatment, and that the average patient is free from symptoms in about eight weeks.

In the autumn of 1932, Hebert<sup>9</sup> related his experience, involving a period of ten months and a total of 250 injections administered to 27 ambulatory patients, in accordance with the method and formula adopted by McIlhenny.



Of these patients, 21 received from 6 to 20 injections, and some the crude oil in special soluble gelatin capsules by mouth. Since the 6 remaining patients were given from 1 to 3 injections only, the results obtained with these are not included in the report. Practically all Hebert's cases were of the chronic infectious atrophic type, the majority of them of long duration. Deep injections into the gluteal muscle were made twice weekly, the initial dose amounting to 3 c.c. and subsequent doses to 5 c.c., prepared in ampules warmed to body temperature. The entire group of 21 cases showed improvement, with the exception of 4, 3 of which were on subsequent examination revealed as nonarthritic, while the other, a case of marked osteoarthritis accompanied by well defined sciatica, failed to benefit from 8 injections. The varying degrees of improvement in the 17 others ranged from almost complete relief from symptoms to reduction of deformities and corresponding restoration of function. Diminution of pain and discomfort was noted in all but a few instances.

Within less than a month after publication of the contribution by Hebert, Robinson,<sup>10</sup> a medical officer at the Army and Navy Hospital in Hot Springs, Arkansas, introduced the therapeutic technic so successfully employed by his two predecessors, and obtained equally favorable results from its use in an initial series of 25 cases of the secondary infectious type, including gonorrheal arthritis, and the hypertrophic, atrophic and mixed forms. The duration of the disease varied from six months to four years. A complete course of injections comprised 21, one every four days, preferably in the gluteal region, or the deltoid, in extremely emaciated patients. However, only about one-half of the total number received the maximum of 21 injections, and the others from 5 to 18, depending upon the degree of improvement. No oil was given by mouth. A laxative and a tonic were administered throughout the course to counteract the tendency of the oil to produce anorexia and constipation. It was observed that the infectious and atrophic types benefited

most from the oil. On the other hand, only temporary relief from pain, with increasing stiffness in the affected joint from ten to twelve hours following injection of the oil, were noted in the hypertrophic and mixed forms. In all cases careful clinical studies were conducted, foci of infection were removed, and hydrotherapy and physiotherapy were administered during the course of injections.

Very recently, Forestier and Certonciny,<sup>11</sup> two physicians of Aix-les-Bains in France, contributed an exhaustive account of their employment of chaulmoogra oil in the treatment of 3 cases of polyarthritis which had persistently resisted chrysotherapy, and of 48 cases of inveterate chronic arthroses. The technic prescribed by McIlhenny was followed for the most part, although in the formula recommended by him these writers substituted scuroform as an anesthetic for benzocaine, on account of the toxic symptoms provoked by the latter. For the first or first two times 2 c.c. was injected into the buttock, and, if tolerance was good, the amount subsequently injected was increased to 3 c.c. or even 5 c.c. A dosage of from 35 c.c. to 50 c.c. in a single series generally proved sufficient to obtain a clinical result without exceeding the limit of tolerance, but confirmed chronic cases were given four or more series of injections at intervals of approximately two to three months. Reactive symptoms consisting of slight anorexia and dryness of the mouth, noted in only 3 to 4 per cent of all cases, were attributed to the anesthetic rather than the oil. In the 3 cases of hopelessly chronic polyarthritis, there was no functional improvement or effect upon the general condition of the patients, despite the fact that each received two series, involving some 15 to 20 injections and totaling 50 to 60 c.c. of chaulmoogra oil. Among the 48 cases of chronic arthroses also treated, 15 were at the time of communication too recent to permit of conclusions concerning the result, and 7 had not reported progress. Of 24 cases followed for not less than 1 year or longer than  $2\frac{1}{2}$  years, 50 per cent of functional improvement was remarked in 7 cases of arthroses of the



knees. In 2 of 6 cases of highly developed bilateral coxarthrosis in aged obese subjects there was notable relief of pain. Clinical functional improvement, definite in 4 and less evident in 2, was effected in a group of 8 cases of unilateral coxarthrosis, 1 of the patients included therein having proved intolerant to all medication, while in another the injections were without result.

The primary purpose of the present article is to report results thus far achieved by me with chaulmoogra oil in the treatment of atrophic, hypertrophic and mixed forms of arthritis. Within the past three years I have attended approximately 200 cases and have selected 50 patients to report, 39 of them females and 11 males, all of whom presented one of the above types of the disease. The duration of the latter ranged between 1 and 20 years. The histories elicited from the majority of these patients revealed that they had undergone every conceivable form of treatment for their malady, evidently without improvement.

At the outset, each of the patients under my care received a thorough physical examination. Routine examinations of stools, urine, and blood were conducted, and in those cases where theoretically there should have been a calcium deficiency, there was none. When practicable, roentgen studies were made, although in certain instances it proved impossible for obvious reasons to execute these in private practice, as the cases came from all walks of life, privileged and underprivileged. All were ambulatory cases.

A simplified technic was employed for the injections. The skin at the site selected was scrubbed well with cotton dipped in alcohol, and metaphen (1-200) applied to the area, which was massaged gently before as well as after injection. Graduated doses of from 1 to 5 c.c. were given with either a 5 c.c. or a 10 c.c. syringe fitted with a needle of moderately wide caliber easily admitting the oily preparation, the latter consisting of the crude chaulmoogra oil mixture, in approximate proportions used in treatment of leprosy, and dis-

pensed in 30 c.c. vials with rubber caps, as well as in enteric globules containing from 2 to 5 minims for oral administration. Both deltoid and gluteal areas were utilized in rotation, and when possible the injections were given at regular intervals, that is, every 3 or 4 days, even though it became necessary occasionally following attainment of the maximum of 5 c.c. to reduce the dose to 1 c.c., since it was deemed particularly essential to continue the treatment to the point of saturation. In this connection it was found that absorption was promoted if care was used in the selection of the site in the body of the muscle and not near its osseous insertion or the fascial planes of the gluteal muscles. Considerable delay in absorption occurred in emaciated patients when injections were given in the deltoid, a fact demonstrating the gluteal areas as sites of election, if not overtaxed.

By commencing with doses of 1 c.c. the local reaction proved slight. A minute reddish area appeared within two hours, and the patient complained of local itching which subsided in two hours. Increase in dosage was accompanied by a corresponding increase of local symptoms. When the maximum dose was attained, certain patients exhibited a definite systemic reaction characterized by fever, headache, malaise, and, more rarely, severe urticaria extending over a wide area around the site of injection, which usually subsided twenty-four hours after onset, and was followed frequently by relief from arthritic pains. At this juncture the average patient assumed a more optimistic attitude toward his infirmity and appeared eager to continue the treatment.

The number of injections required to afford relief varied with the type of the disease, habits, age, and control of patients; consequently, no set limit could be established. Frequently no relief was experienced until after as many as 25 injections had been given, while in one instance 78 injections were necessary. On the other hand, a definite response was obtained in some cases after as few as 3 injections. As already stated, continuity of treatment is imperative,

and after an interruption of about ten days or two weeks, an initial injection of 1 c.c. must again be made, with gradual progression as before until the maximum injection of 5 c.c. is once more attained.

The advisability of oral administration of the oil depended mainly upon the age of the patient and the acid character of the gastric contents. Persons over sixty years of age who received the oil by mouth suffered from digestive disturbances followed by emesis within thirty minutes in some instances, while those with achylia or severe hypochlorhydria did not appear to tolerate the globules. In a few cases where there was biliary disease the intramuscular injections had to be discontinued because of disturbance of the biliary function. Oral administration is positively contraindicated in cholecystitis.

It was interesting to note that in the early stages of treatment the articular symptoms were somewhat exaggerated and intensified, and that regions previously free from symptoms became the center of mild disturbance. At the same time a sensation of fulness with tingling was experienced at the site of injection. In 3 cases in which the deltoid was used there was definite laryngeal irritation with violent coughing which continued for five minutes, while similar symptoms of laryngeal irritation were remarked in only 1 in which the gluteal area was used for the full 5 c.c. dose. The only other complications which were encountered consisted of 4 so-called "sterile abscesses," actually localized accumulations of unabsorbed oil. These abscesses were small and, if left alone, pointed and evacuated themselves without surgical interference. In still another instance the persistence of a most intense urticaria rendered it impossible to continue the treatment. Fortunately, this complication appeared in only a small number of cases, but it was most severe.

In general, and as a group, the most satisfactory results for patient and physician alike were obtained with the acute and subacute types of arthritis. Naturally, in the presence of complete ankylosis the prognosis is distinctly

unfavorable. However, truly astonishing results in the way of relief from pain and increase of motion in the joint were noted in cases in which the ankylosis was incomplete.

A summary of the progress of treatment in each of the 50 cases included in the series is presented in the appended table.

All efforts to determine the source of the efficacy of chaulmoogra oil in the treatment of arthritis, through the establishment of analogies with the well-known results of its therapeutic employment in leprosy, have so far failed. In this connection, however, two tentative hypotheses involving (a) its bactericidal potency, and (b) its influence on retention of calcium, may be advanced.

With respect to the first of these hypotheses, Walker and Sweeney<sup>12</sup> long ago demonstrated that chaulmoogra oil contains bactericidal substances, namely, chaulmoogric and hydnocarpic acids, which are approximately one hundred times more active than phenol. But the bactericidal action thus exhibited proved specific only for the acid-fast bacteria present in leprosy as well as in tuberculosis, and inactive against all the other microorganisms included in the studies conducted by these writers. Prominent among the microorganisms in question are precisely the *Staphylococcus aureus* and the non-hemolytic streptococcus, both of which have, according to Pemberton,<sup>13</sup> been isolated repeatedly from the throat, teeth, sinuses, and intestinal tract of arthritics, and later shown experimentally as pathogenic for the joints of animals. More recently, Trapesontzewa and Nikolskaja<sup>14</sup> have adduced incontrovertible evidence in support of the results obtained previously by Walker and Sweeney relative to the positive specificity of active principles of chaulmoogra against the bacilli of Hansen and Koch. While the reported observations of these investigators would appear to nullify the assumption of bactericidal action in the case of microorganisms generally regarded as etiologic factors in arthritis, nevertheless it is believed that the active acid constituents of chaulmoogra oil already referred to, when present in suboptimal

| NUMBER | TYPE* | SEX | AGE | DATE OF COMMENCEMENT OF TREATMENT | NUMBER OF TREATMENTS | DATE OF INITIAL SIGN OF IMPROVEMENT | PERCENTAGE OF IMPROVEMENT | REMARKS                                                                                                                     |
|--------|-------|-----|-----|-----------------------------------|----------------------|-------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1      | A     | M   | 67  | November 20, 1936                 | 14                   | December 18, 1936                   | 95                        | Four brief courses of treatment were given over a period of 5 months                                                        |
| 2      | A     | F   | 56  | March 4, 1936                     | 20                   | March 30, 1936                      | 60                        | Patient was sufficiently improved to discontinue treatment, and went to Europe                                              |
| 3      | M     | F   | 33  | April 23, 1936                    | 64                   | May 1, 1936                         | 95                        | Most aggravated case involving wrists, hands, shoulders, ankles; is now almost completely free from symptoms                |
| 4      | H     | F   | 31  | January 29, 1937                  | 13                   | March 4, 1937                       | 60                        | Involved shoulders, arms, hands; swelling and pain gone; able to remove rings from fingers; urticarial reaction             |
| 5      | A     | F   | 66  | July 20, 1937                     | 4                    | July 27, 1937                       | 15                        | Left shoulder affected; had to suspend treatments because of intense protein reaction                                       |
| 6      | M     | F   | 58  | November 10, 1936                 | 18                   | December 2, 1936                    | 75                        | Wrists and both hands involved; able to open and close hands without pain                                                   |
| 7      | H     | F   | 49  | April 17, 1935                    | 7                    | May 14, 1935                        | 85                        | Affected left knee and fingers; no pain                                                                                     |
| 8      | A     | M   | 63  | September 22, 1937                | 12                   | October 5, 1937                     | 95                        | Both shoulders free from pain                                                                                               |
| 9      | A     | F   | 44  | September 21, 1937                | 6                    | October 21, 1937                    | 75                        | Hands and knees free from pain                                                                                              |
| 10     | H     | F   | 47  | March 21, 1935                    | 10                   | March 25, 1935                      | 100                       | Second treatment showed improvement; swelling and pain in fingers of both hands subsided                                    |
| 11     | A     | F   | 68  | May 17, 1935                      | 8                    | May 21, 1935                        | 90                        | Five treatments; took globules 5 minims t.i.d.; able to sit cross-legged without pain                                       |
| 12     | A     | M   | 60  | April 7, 1936                     | 3                    | April 25, 1936                      | 80                        | No pain but deformity of fingers present; globules by mouth                                                                 |
| 13     | M     | F   | 70  | November 19, 1935                 | 10                   | November 26, 1935                   | 75                        | Able to walk; no pain in knees                                                                                              |
| 14     | M     | F   | 74  | February 26, 1936                 | 26                   | March 2, 1936                       | 100                       | Acute seizures of pain ceased after 3 treatments                                                                            |
| 15     | H     | F   | 73  | February 21, 1935                 | 10                   | March 1, 1935                       | 50                        | Treatment had to be discontinued because of gallbladder disease; sterile abscess; no pain in knees and could walk           |
| 16     | A     | F   | 57  | February 24, 1937                 | 18                   | March 9, 1937                       | 100                       | No pain; complete relief                                                                                                    |
| 17     | A     | F   | 42  | January 17, 1936                  | 5                    | January 31, 1936                    | 100                       | Complete relief, shoulders and hands                                                                                        |
| 18     | M     | F   | 55  | November 9, 1937                  | 38                   | February 14, 1938                   | 70                        | Large woman, slightly overweight; saturation point delayed                                                                  |
| 19     | H     | F   | 57  | November 12, 1936                 | 31                   | December 19, 1936                   | 50                        | Treatments had to be discontinued because of cerebral hemorrhage; tight band about knees disappeared                        |
| 20     | H     | F   | 49  | April 28, 1937                    | 12                   | May 7, 1937                         | 60                        | Belonged to religious order and was sent away; treatment discontinued                                                       |
| 21     | A     | M   | 60  | May 21, 1936                      | 45                   | May 26, 1936                        | 100                       | Shoulder joints involved; complete recovery; discharged colonel of U. S. Army                                               |
| 22     | A     | F   | 58  | May 20, 1937                      | 18                   | June 1, 1937                        | 100                       | Affected right hand, left elbow; complete recovery; discharged                                                              |
| 23     | A     | M   | 86  | September 17, 1936                | 8                    | October 14, 1936                    | 100                       | Left wrist and elbow involved; remarkable case; expected no results; swelling and pain disappeared; discharged              |
| 24     | M     | F   | 48  | June 18, 1935                     | 78                   | June 28, 1935                       | 50                        | Most aggravated case; hands, elbows, shoulders, ankles, and knees affected; three separate courses of treatment             |
| 25     | H     | F   | 63  | April 6, 1937                     | 20                   | May 14, 1937                        | 100                       | Osteoarthritis right shoulder; complete relief                                                                              |
| 26     | A     | M   | 75  | April 23, 1937                    | 34                   | May 20, 1937                        | 10                        | Mixed type; spine; after eighth treatment small abscess developed (left deltoid); allowed to drain; very little improvement |
| 27     | A     | F   | 46  | January 20, 1938                  | 18                   | January 24, 1938                    | 75                        | Both hands involved; still under treatment (April 8, 1938); very marked improvement; no pain, some stiffness                |



| NUM-<br>BER | TYPE* | SEX | AGE | DATE OF COMMENCEMENT<br>OF TREATMENT | NUMBER OF<br>TREATMENTS | DATE OF INITIAL SIGN OF<br>IMPROVEMENT | PERCENTAGE OF<br>IMPROVEMENT | REMARKS                                                                                                                                                       |
|-------------|-------|-----|-----|--------------------------------------|-------------------------|----------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28          | A     | F   | 59  | January 6, 1938                      | 14                      | January 13, 1938                       | 40                           | Several joints ankylosed; pain less severe; can walk on heel; still under treatment                                                                           |
| 29          | M     | F   | 53  | October 2, 1935                      | 63                      | October 15, 1935                       | 75                           | Mixed type; fingers and neck; fingers improved first; cervical spine greatly improved                                                                         |
| 30          | M     | F   | 60  | October 3, 1935                      | 8                       | October 22, 1935                       | 75                           | Mixed type; knees and elbows; second treatment; subsidence of swelling in knees                                                                               |
| 31          | H     | M   | 52  | January 4, 1938                      | 14                      | February 21, 1938                      | 60                           | Diplomat; both hands affected; infected left antrum; gluteal induration; definite improvement                                                                 |
| 32          | A     | M   | 70  | April 16, 1935                       | 9                       | May 8, 1935                            | 90                           | Knees; unable to walk; used to crawl into his house; not so well in fifty years                                                                               |
| 33          | A     | F   | 74  | July 14, 1936                        | 28                      | September 30, 1936                     | 15                           | Age and chronicity proved to be too much in this atrophic case                                                                                                |
| 34          | A     | F   | 57  | August 4, 1937                       | 35                      | August 31, 1937                        | 50                           | Atrophic type; hands, arms, shoulders involved; still under treatment                                                                                         |
| 35          | M     | F   | 40  | December 2, 1937                     | 15                      | December 6, 1937                       | 90                           | Affected cervical spine and shoulders; cracking and crepitus in neck disappeared completely after three brief courses of treatment                            |
| 36          | M     | F   | 68  | July 15, 1937                        | 14                      | July 22, 1937                          | 70                           | Mixed type; improvement very definite after third treatment                                                                                                   |
| 37          | H     | F   | 56  | February 8, 1936                     | 11                      | February 25, 1936                      | 80                           | Improvement very definite in this case; all symptoms subsided                                                                                                 |
| 38          | M     | F   | 70  | March 21, 1935                       | 27                      | April 5, 1935                          | 90                           | Case of cholecystitis, so globules were discontinued because of digestive disturbances; mixed type; knees showed greatest improvement                         |
| 39          | M     | M   | 59  | October 11, 1935                     | 61                      | October 15, 1935                       | 70                           | Mixed type; this man was kept at work for 2 years                                                                                                             |
| 40          | M     | F   | 68  | April 13, 1935                       | 68                      | April 20, 1935                         | 80                           | Mixed type; hands; globules by mouth; definite improvement                                                                                                    |
| 41          | M     | F   | 57  | March 1, 1937                        | 52                      | April 2, 1937                          | 90                           | Mixed type; hands, elbows, shoulders, urticarial reaction; has made a wonderful recovery                                                                      |
| 42          | H     | M   | 63  | May 10, 1935                         | 37                      | May 17, 1935                           | 90                           | Involved terminal joints of both hands; all joints improved with exception of left middle finger, which is now improving with this third series of treatments |
| 43          | A     | F   | 57  | April 10, 1935                       | 13                      | April 24, 1935                         | 100                          | Atrophic type; left knee joint; pain, flexion pronounced; all symptoms relieved; discharged                                                                   |
| 44          | A     | M   | 22  | January 11, 1937                     | 39                      | January 25, 1937                       | 100                          | Affected ankles, knee, and wrists; complete recovery                                                                                                          |
| 45          | A     | F   | 57  | November 11, 1937                    | 19                      | January 18, 1938                       | 80                           | Improving; now under treatment                                                                                                                                |
| 46          | M     | F   | 58  | November 16, 1935                    | 27                      | November 19, 1935                      | 50                           | Case appeared hopeless from the beginning, but pain was relieved and general health greatly improved.                                                         |
| 47          | H     | F   | 26  | March 21, 1938                       | 4                       | April 1, 1938                          | ?                            | Spine involved. Still under treatment                                                                                                                         |
| 48          | H     | F   | 73  | February 1, 1935                     | 9                       | March 5, 1935                          | 15                           | Both knees affected; cholecystitis; deltoid abscess; had to discontinue treatment on account of nausea and vomiting                                           |
| 49          | A     | F   | 66  | February 10, 1938                    | 8                       | February 21, 1938                      | 80                           | This patient showed clearing of arthritic symptoms, but developed a general neuritis not affected by treatment                                                |
| 50          | A     | F   | 42  | October 14, 1936                     | 1                       | October 17, 1936                       | 100                          | Left knee; an acute case which responded promptly                                                                                                             |

\* A—Atrophic; H—Hypertrophic; M—Mixed.

concentration in the tissues, may ultimately prove capable either of destroying these pathogenic organisms, or of inhibiting or damaging them to a degree that renders them liable to the immunological responses of their host. This concept would thus account for the protracted period required for effective therapeutics.

The second of the hypotheses under consideration is based upon the observation of McCrudden,<sup>15</sup> who in collaboration with Goldthwaite, Painter, and Osgood found a marked negative balance of calcium in cases of atrophic arthritis, and that of Read,<sup>16</sup> who demonstrated by experiments on dogs the rôle of chaulmoogra oil in the promotion of calcium retention. Read showed that chaulmoogra oil administered in small oral doses to these animals produced a marked increase in urinary and a lesser increase in fecal calcium, while continued administration reversed this effect and favored retention of calcium. These observations, together with the fact that most satisfactory results have been obtained with chaulmoogra oil in the treatment of cases of the atrophic type of arthritis, would seem to confirm the theory which assigns to the oil an important function in the conservation of calcium.

Although the use of chaulmoogra oil in arthritis has been and still is entirely empirical, it is no less so in leprosy, while the conspicuously successful results achieved through its employment, particularly in the acute infectious and atrophic types of arthritis, undoubtedly mark its discovery as an effective remedy for that enigmatic disease as one of the most signal advances in the field of modern therapeutics.

#### SUMMARY AND CONCLUSION

The history of the original employment of chaulmoogra oil for the treatment of so-called rheumatism and of its subsequent application to the therapy of arthritis is briefly narrated.

Results obtained by the author with the administration of the oil to 50 patients suffering from the atrophic, hypertrophic and mixed forms of arthritis are reported, with acknowledgment again of the purely empirical treatment,

but with a large measure of relief of symptoms. The cases included in the appended table were selected primarily because they comprise the three principal types of arthritis enumerated, and afford a fair idea of the comparative degree of success of the treatment in each. As a rule, the highest percentages of improvement were attained in the acute and subacute forms of the disease, and because of the present chaotic classification, the use of the more general classification mentioned in this group provides the basis of the cases reported in this group.

Two major hypotheses are proposed in an endeavor to account for the efficacy of chaulmoogra oil in arthritis, namely, (1) its bactericidal potency and (2) its influence on the retention of calcium.

While the use of chaulmoogra oil in arthritis is necessarily empirical, the uniformly favorable experience which has attended its employment by the author and others appears to warrant a continuance of its use as a therapeutic agent in all forms of that disease, and last but not least, an appeal is made to the profession not to forget the patient in the effort to increase the overlaid classification of types of arthritis.

#### BIBLIOGRAPHY

1. ROXBURGH, W.: *Flora Indica*, Serampore, 1832, page 837.
2. MOUAT, F. J.: *Indian Ann. M. Sc.*, 1854, 1, 646.
3. BENTLEY, R. AND TRIMEN, H.: *Medicinal Plants*. London, J. and A. Churchill, 1880, 1, No. 28.
4. CHRISTY, T.: *New Commercial Plants and Drugs*. London, 1880, No. 3, page 37.
5. CHRISTY, T.: *Ibid.*, 2nd ed. London, 1884, No. 4, page 20.
6. *Recent Studies in Therapeutics*. *Brit. M. J.*, 1881, 1, 475.
7. McILHENNY, P. A.: *J. A. M. A.*, 1926, 87, 1888.
8. McILHENNY, P. A.: *New Orleans M. & S. J.*, 1931, 84, 182.
9. HEBERT, G. A.: *Tri-State M. J.*, 1933, 5, 1050.
10. ROBINSON, A. H.: *Tri-State M. J.*, 1937, 9, 1838.
11. FORESTIER, J. AND CERTONCINY, A.: *Gaz. med. de France*, 1937, 44, 911.
12. WALKER, E. L. AND SWEENEY, M. A.: *J. Infect. Dis.*, 1920, 26, 238.
13. PEMBERTON, R.: *Arthritis and Rheumatoid Conditions; Their Nature and Treatment*, 2nd ed. Philadelphia, Lea & Febiger, 1935.
14. TRAPESONTZEWA, C. AND NIKOLSKAJA, Z.: *Rev. internat. du trachome*, 1934, 11, 29.
15. GOLDTHWAITE, J. E., PAINTER, C. F., AND OSGOOD, R. B.: *Am. Med.*, 1904, 7, 547; 590.
16. READ, B. E.: *J. Biol. Chem.*, 1924-25, 62, 515.

## AVITAMINOSES AS OBSERVED IN PRIVATE WORK

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We wish to report certain cases of vitamin deficiency disease with the thought that these cases are typical of those which may occur in anyone's practice.

### VITAMIN A

We have not recognized definite vitamin A deficiencies. We have prescribed fish oils in the hope that winter respiratory diseases might be lessened in frequency. However, a control series has not been run, and therefore we probably have no right to an opinion, but our clinical impression is that nothing has been accomplished by such use. Certainly no striking benefits have been observed.

### VITAMIN B COMPLEX

The complexity of vitamin B is now well known. It is evident that this material contains many substances, each of a distinct biologic property. Of the different constituents, only two have been proved to be directly applicable to human disease. These constituents are vitamin B<sub>1</sub> and the pellagra-preventive factor.

### VITAMIN B<sub>1</sub>

During the past decade alcoholic polyneuritis, polyneuritis of pregnancy, many of the infectious polyneuritides, diabetic polyneuritis, and others, have been identified as vitamin B<sub>1</sub> deficiencies. The recent development of pure crystalline B<sub>1</sub> has done much to clarify our knowledge. As illustrating the results derived from this material we have the following case:

Mr. B. H. L., aged 50 years, first seen, August 14, 1937, complained of numbness and muscular weakness in the legs and to a lesser degree in the arms. At an early age he began to consume large quantities of whiskey and had continued to do so throughout his adult life. Four years before consulting us he first noticed numbness in his legs, for which he was given massage and hydrotherapy. A year later he was seen by a neurologist who diagnosed his trouble as alcoholic neuritis. The original numbness gradually increased to the point of complete

loss of touch, pain and temperature sensations. Three weeks before we saw him he began to have much muscular weakness of the legs, incoördination, and ataxia. On examination he appeared well nourished. The abdominal and thoracic viscera showed no apparent disease. Both the patellar reflexes were equal and active. The Achilles' reflexes were absent. Babinski's sign was negative and there was no patellar or ankle clonus. Muscular strength in both arms and legs was fairly well preserved. There was complete loss of vibratory sense as high as the iliac crests. Pain and temperature senses were markedly diminished over both legs. Position sense was impaired, and the Romberg sign was positive. Laboratory examination showed little except an absence of free hydrochloric acid in the gastric juice. The patient was given a dietary scheme of high caloric and high vitamin content. Three ounces of powdered brewer's yeast were prescribed daily and 20 mg. of vitamin B<sub>1</sub> were given weekly. To date, approximately 8 months after beginning treatment, he is greatly improved. He is able to walk without ataxia. There is very little muscular weakness. He is again able to write without tremor. There has been a return of vibratory sense as far down as the knees. His position sense is improved; detection of pain over the dorsum of the feet is now perceptible, and thermal sense has improved.

This patient presents a typical case of so-called alcoholic peripheral neuritis. That the neural disorder is founded on a basis of deficiency of vitamin B<sub>1</sub> seems unquestioned. Jolliffe<sup>1</sup> and others have shown conclusively the therapeutic value of vitamin B<sub>1</sub> in these cases. It is unfortunate that because of financial reasons the patient has been unable to secure a more generous dose of the crystalline substance. Undoubtedly his improvement would have been more rapid.

### THE PELLAGRA-PREVENTIVE (P-P) FACTOR

Since the work of Goldberger<sup>2</sup> and his co-workers, the dietary deficiency theory of the etiology of pellagra has seemed reasonably secure. Numerous food substances have been proved to contain the material, or materials, which may cure pellagra. Among these, yeast and liver have been the most universally used.



Within the past few months a specific chemical substance, nicotinic acid, has also been found to change dramatically the course of the disease.<sup>3,4</sup> Whether nicotinic acid is the specific curative principle of all manifestations of pellagra remains to be proved. As an illustration of both the endemic and alcoholic types we have the following cases: .

**Case 1.** Endemic pellagra. Mr. F. W. G., aged 60 years, consulted us, June 15, 1937, complaining of diarrhea, loss of strength and vitality, and a dermatitis over the dorsal aspect of the fingers and toes. Ten years before he had consulted a physician for diarrhea and at that time he was found to have an achlorhydria. Improvement had followed treatment and had persisted until two years before he consulted us, when symptoms had recurred. He had never used alcohol. He stated that the dermatitis which he had when he consulted us was similar to skin lesions which had been present during the springs of the preceding two years. On physical examination there was no abnormality of the tongue and mucous membranes of the mouth. Over the dorsum of the hands there was a rough hyperkeratotic dermatitis which was typically that of pellagra. Laboratory findings showed an absence of free hydrochloric acid in the gastric contents and a low-grade hypochromic anemia. He was advised to take a diet high in caloric value and vitamin content. In addition he was given 5 c.c. of liver extract intramuscularly twice each week.\* On this régime he grew stronger and there was cessation of the diarrhea. The dermatitis disappeared. He was later given oral liver extract, 3 ounces daily. He improved strikingly over a period of two months and today writes that he is in good health. (Liver extract contains a high content of the pellagra-preventive factor.)

**Case 2.** Alcoholic pellagra. Miss D. F., a white woman of 38 years, was seen January 6, 1938. She complained of nervousness, which had existed for a year. She had been drinking heavily of alcohol and had consumed little food. She had developed a diarrhea of 5 to 6 stools each day, and she had lost considerably in weight. For a few weeks she had noted much soreness of her mouth and pains in the legs and feet. Physical examination showed a markedly malnourished woman. The oral mucous membranes were diffusely injected and the tongue was reddened and smooth about the borders. There was a rough scaly dermatitis over the right elbow. There was hyperesthesia to touch over the legs below the knees. The patient was hospitalized and given a

diet high in calories and vitamins. In addition she was given 3 ounces of powdered brewer's yeast daily and injections of intramuscular liver extract, 3 c.c. every other day. The mouth and skin lesions dramatically cleared and she was discharged from the hospital in good condition.

These two cases seem to represent the two classical types of pellagra. The first, or endemic, arose over a period of years, probably from taking an insufficient diet. The second was unquestionably of alcoholic origin. Both responded to the use of the pellagra-preventive factor. It is interesting to compare the manifestations of the disease in these two patients. In the endemic patient, the growth of the disease was gradual, with skin changes the outstanding findings. In the alcoholic, the disorder ran a much more rapid course, with the most striking changes in the mouth and the peripheral nerves. Such courses and manifestations are representative of the majority of cases in their respective groups.

#### OTHER COMPONENTS OF THE VITAMIN B COMPLEX

Of the remaining components of the vitamin B complex, the chemical structure of only one is definitely known. This material, riboflavine, is apparently necessary for adequate growth of rats. As in the case of the filtrate factor and vitamins B<sub>3</sub>, B<sub>4</sub>, B<sub>5</sub>, and B<sub>6</sub>, it is not definitely linked with a disease state in man. This by no means, however, indicates that they are unimportant in human nutrition. How much of these substances is required, and what abnormalities become manifest by their absence, is not as yet known in the case of human beings. During the past several months we have observed a number of cases with deficiencies which have appeared concomitant with other organic diseases. The deficiency aspect in these patients we believe to have been partially, if not wholly, the result of chronic underlying pathology. The underlying mechanism seems to have been faulty absorption, assimilation and storage of vitamins. These persons have all been treated with materials containing the whole vitamin B complex. No attempt has been made to treat them with any of the known specific components of the complex.

\* Liver extract is now measured in units, 1 unit being that amount which when administered daily to a patient with pernicious anemia in relapse, produces a satisfactory rise in the erythrocyte count. Ed.

**Case 1.** Congestive heart disease and cirrhosis of the liver. Mr. T. P. L., a man of 64 years, consulted us, November 15, 1937. He had suffered with auricular fibrillation for some years. In addition he had pronounced alcoholic cirrhosis which required frequent paracentesis. Though at the time he was seen by us his heart and liver condition seemed unchanged, he was losing rapidly in vitality and sense of well-being. His dietary intake appeared to have been quite normal. His weakness seemed to be out of proportion to the condition of his heart and liver. On examination he was found to have a diffusely reddened tongue with some loss of papillae. There were no skin changes. He was given 5 c.c. of liver extract intramuscularly 3 times a week. After 2 weeks on this régime he stated that he had improved greatly in general strength and vitality. He was able to perform his duties without fatigue, a state quite new to him in recent months. The glossitis disappeared dramatically under the liver therapy.

**Case 2.** Cirrhosis of the liver. Mr. H. R., aged 48 years, a former patient, was again seen in January, 1938. He had been a chronic alcoholic in the past but had in recent years refrained from drinking intoxicating beverages. In 1929 he was thought to have had a typical cirrhosis of the liver, and at that time an enlarged spleen was removed. During the past 6 to 8 months he had noted progressive weakness. On examination, he had a diffusely reddened tongue. There was no evidence of skin changes. The liver was enormously large, hard and tender. He was given material containing the vitamin B complex, including oral liver therapy and a preparation of yeast. Under this therapy he improved and when last seen he seemed considerably better. The condition of his tongue reverted to normal with the exception of residual papillary atrophy.

In these cases, both of which present clear evidence of hepatic damage, one could readily demonstrate slight, though definite, evidence of vitamin deficiency. By all the known criteria, the manifestations as observed seem to be closely allied to the vitamin B complex. It seems particularly significant that they appeared in persons with liver disease. It does not seem amiss here to propose a theory of faulty storage of some element of the B complex in the livers of these two patients, and to suggest that a search be made for similar changes in all persons with long standing hepatic cirrhosis.

**Case 3.** Chronic diarrhea. Mrs. C. F., a housewife of 67 years, complained of a red and burning tongue. Eight years before, her gall bladder had been removed.

Since that time she had had a tendency toward frequent bowel movements and at times actual diarrhea of 4 to 5 stools daily. At times she complained of burning of the tongue, and during these periods of diarrhea the tongue was decidedly reddened. On examination, the tongue was found decidedly reddened and its borders moderately smooth. On the dorsum of the right hand, between the little and ring fingers, there was an area of scaly dermatitis which had the appearance of a pellagrous lesion. She was given powdered brewer's yeast, 3 ounces daily. Fifteen days later the glossitis had tremendously improved and there was complete disappearance of the dermatitis.

It would seem that this patient, as a result of a looseness arising secondary to a cholecystectomy, was unable to adequately absorb the B complex. Careful questioning concerning her diet indicated that she had eaten a regular mixed diet. We believe that in chronic diarrhea of this origin, as in chronic diarrhea of any type, an avitaminosis may easily arise.

We wish to discuss here another group which we believe represents a B<sub>2</sub> deficiency. We refer to certain patients with achylia gastrica, patients without pernicious anemia and without tongue or skin manifestations of B<sub>2</sub> deficiency. Having in mind the fact that 80 per cent of patients with pellagra have an achylia, and the fact that an achylia exists for a long while before pernicious anemia becomes evident, for some time we have administered liver parenterally to those people with achylia who present themselves with symptoms of exhaustion and depletion. In general, therapeutic response has been striking. The following case report is typical of 6 which we have treated.

Mrs. E. C., aged 33 years, was first seen by one of us in January 1926 for symptoms of exhaustion, loss of weight, and a tendency to looseness associated with intestinal gas and cramping pains. Examination revealed an achylia gastrica. Hydrochloric acid was prescribed and used for a long period with indefinite results. She was again studied in January 1936 for the same complaints, and the finding of an achylia was confirmed. She was not anemic and general physical and laboratory studies revealed nothing of significance. At this time, in addition to hydrochloric acid, she was given liver intramuscularly, and a most remarkable clinical result was obtained. There was rapid gain in weight and strength and she went into the best state of health which



she had enjoyed in years. This she has maintained. She still receives injections of liver at long intervals.

It seems definite that these patients with achylas should be closely watched. They are not only candidates for pernicious anemia and pellagra, but they are likely individuals who suffer with subclinical vitamin B<sub>2</sub> deficiencies. Certainly the striking results which may follow liver therapy justify this point of view. Liver contains all of the elements of the B complex, and although it cannot be proved, it is probable that it is the factor which accomplishes the therapeutic response.

#### VITAMIN C

Knowledge of the existence in adults of clinical scurvy dates back to medieval time. Even then the value of citrus fruits as a means of preventing the disease was well known. It was not until 1932, however, that a crystalline substance was isolated and identified as vitamin C. This substance is now termed cevitamic acid. Numerous reports of its effectiveness in infantile scurvy have appeared since its identification.

A daily ration of 50 mg. is said to promote cure of the disease from within a few days to a week. Within the past year or two, much work has proceeded in an attempt to treat with cevitamic acid some of the hemorrhagic diatheses of adults. Thrombocytopenic and non-thrombocytopenic purpura and true familial hemophilia have been investigated. Results obtained from use of the substance in these diseases are conflicting and difficult to evaluate. Investigation has gone further, however, to show that scorbutic bleeding phenomena are not unknown in diseases formerly thought entirely unrelated to the deficiency. Persons with peptic ulcer who have been maintained on a rigid dietary régime, persons with ulcerative colitis, persons with malignancy of the bowel, and others, have been shown to sometimes present evidence of vitamin C deficiency. Though outstanding manifestations of clinical scurvy in these people are rare, they may have deficiency of the vitamin to such a degree as to promote spontaneous hemorrhage.

Wright and Lilienfeld<sup>5</sup> have recently written of their experiences with such patients and describe the use of a tourniquet test as a method of accurately testing capillary fragility in suspected cases. This procedure is accomplished by the use of an ordinary blood pressure apparatus placed on the upper arm, and the maintenance for 15 minutes of a pressure midway between the diastolic and systolic pressures. Five minutes are allowed to elapse after removal of the apparatus, and petechiae are counted with the naked eye over a central area 2.5 cm. in diameter, 4 cm. below the midcubital fossa. Ten petechiae are regarded as the upper limit of normal. We have employed the use of this test in many suspected cases, some of which have been positive and some not.

As illustrative of individuals with subclinical scurvy, as manifested by a positive capillary fragility test, we have the following cases:

**Case 1.** Ulcerative colitis. Miss H. H., a woman of 43 years, was seen, March 21, 1938, because of diarrhea. Apparently she had been well until June 1934 when she had suffered with an episode of nausea, vomiting, loss of weight, and diarrhea accompanied by the passage of blood. She was treated symptomatically and improved, but with residual weakness. In the fall of 1935, and again in the fall of 1936, she had two other mild episodes. The present attack began in October 1937 and had persisted to date. She had as many as 16 stools daily and lost 24 pounds. She had had nausea and vomiting, and fever had been a persistent feature. Physically she was considerably underweight. Laboratory studies were normal except for the barium enema which revealed a typical colon of ulcerative colitis. She was given the usual symptomatic treatment, including bed rest and dietary restrictions. Her diarrhea rapidly ceased under this régime. On April 12, 1938, a tourniquet test revealed 88 petechial hemorrhages. She was given 100 mg. of civitamic acid intravenously daily for 6 days. At the end of that time the tourniquet test showed only 25 petechial hemorrhages. This patient had taken orange juice regularly during the course of her illness. In spite of this, she had developed the capillary fragility already described. It is obvious that in this case of ulcerative colitis the avitaminosis was due not to inadequate ingestion of the vitamin, but to either absorption or faulty utilization of the vitamin.

**Case 2.** Gastric ulcer. Mr. R. L. P., a man of 38 years, was seen on January 17, 1938, because of epigastric pain. This commenced a few months before



and made its appearance following an attack of grippe. The pain was located in the midepigastrium, came on one or two hours after eating and was universally relieved by food. There was no weight loss. Physical examination revealed no pertinent findings except for a distinct degree of undernutrition. Laboratory studies showed hyperacidity, and roentgenologic examination of his stomach revealed an ulcer niche on the lesser curvature. He was given an ulcer diet of the modified Sippy type. He gained rapid relief from his symptoms. This diet, which he adhered to rigidly, contained no citrus fruits. On April 26, 1938, three months after beginning treatment, a tourniquet test showed 70 petechial hemorrhages. One hundred milligrams of cevitic acid was prescribed daily, to be taken by mouth. After use of this preparation for 8 days, a tourniquet test revealed only 58 petechiae, indicating improvement in this brief time.

**Case 3. Anxiety neurosis.** Mrs. R. H., aged 54 years, was seen on April 25, 1938. She had voluntarily denied herself all citrus fruits for a period of two or three years, thinking that such fruits caused her to have headache. A general study was of a negative nature. It was quite evident that the patient was of a neurotic type and that she had many absurd ideas concerning foods. A tourniquet test revealed 90 petechiae in the field studied. She received 5 daily injections of cevitic acid, each of 100 mg. There was marked subjective improvement and a tourniquet test done on May 4 revealed only 12 petechiae.

#### VITAMIN D AND OTHER VITAMINS

We have recognized no cases of vitamin D deficiency in adults, and we have nothing to report concerning the rarer vitamins.

#### SUMMARY

Nine cases of definite vitamin deficiency states are reported. In addition, six other cases, thought to be examples of avitaminosis, have been mentioned.

As we have observed the problem in private work, vitamin deficiency states occur predominantly secondary to other disease states, such as:

1. Chronic alcoholism, giving B<sub>1</sub> or B<sub>2</sub> deficiencies, or both.
2. Cirrhosis of the liver, giving B<sub>2</sub> deficiency.
3. Chronic diarrhea, such as that of the patient with looseness following a cholecystectomy, leading to a B<sub>2</sub> deficiency.

4. Ulcerative colitis, giving a C deficiency. (A and B deficiencies have been reported elsewhere, secondary to this disease<sup>5</sup>).

5. Achylia gastrica, producing B<sub>2</sub> deficiency.

There are certain cases arising independent of these considerations. The endemic case of pellagra reported would fall in this category, unless it were assumed that a preëxisting achylia had to do with its production. In addition, cases may arise secondary to long continuation on restricted diets, such as diets for peptic ulcer. Cases may also arise secondary to psychologic states in which patients have denied themselves certain foods because of erroneous judgment concerning their effect.

It is obvious that deficiency states do occur in low income groups entirely independent of underlying disease which may affect the absorption or utilization of vitamins. Certainly, however, in patients of average means such is extremely rare. The average American diet contains an abundance of all of the vitamins. Unless something exists to interfere with their utilization, avitaminosis rarely arises.

We have observed no evidences to justify the indiscriminate prescribing of vitamins or vitamin mixtures. In the first place, most of the exploited preparations contain inadequate dosage for treatment of a true deficiency, and in the second place, the majority of people for whom such preparations are prescribed have no deficiency.

#### BIBLIOGRAPHY

1. GOODHART, R. AND JOLLIFFE, N.: Effects of Vitamin B (B<sub>1</sub>) Therapy in the Polyneuritis of Alcohol Addicts. *J. A. M. A.*, 1938, **110**, 414.
2. GOLDBERGER, J., WHEELER, G. E., AND SYDENSTRICKER, E.: Relation of Diet to Pellagra Incidence. *U. S. Public Health Report*, 1920, **35**, 648.
3. SPIES, T. D., COOPER, C., AND BLANKENHORN, M. A.: Use of Nicotinic Acid in the Treatment of Pellagra, *J. A. M. A.*, 1938, **110**, 622.
4. SMITH, D. T., RUFFIN, J. M., AND SMITH, S. G.: Pellagra Successfully Treated with Nicotinic Acid: Case Report. *J. A. M. A.*, 1937, **109**, 2054.
5. WRIGHT, I. S. AND LILIENFELD, A.: Pharmacologic and Therapeutic Properties of Crystalline Vitamin C (Cevitic Acid), with Especial Reference to Its Effects on Capillary Fragility. *Arch. Int. Med.*, 1936, **57**, 241.

## THE PROBLEM OF CHRONIC ALCOHOLISM AND ITS TREATMENT\*

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The general medical attitude to patients with alcohol problems, together with my own feelings, have been expressed in a recent paper which stated, "For many years, American psychiatry, with few exceptions, has looked upon the alcoholic with more or less hopelessness. This notion has become so deep-rooted in most sections, that one finds the individuality of the patient unjustifiably lost in the condemnatory fatalistic 'hands off' attitude of some of our colleagues. I do not wish to imply that there is hope for all alcoholics, for one must concede that many are past correction. However, a carefully selected number can be guided and helped to attain the goal of all therapy (total abstinence) by an objective, dispassionate and individual approach."

Society has termed individuals with alcohol problems as alcoholics and chronic alcoholics. The terms alcoholic and chronic alcoholic as used here include only the pathologic drinker and definitely exclude the social drinker. The social drinker can "handle" his or her alcohol while the other is "handled" by alcohol. That is, social drinking does not interfere with the individual's important life activities in business, in the home, in the family and in the community. Problem drinkers, uncontrolled drinkers, dipsomaniacs and spree drinkers are all pathologic drinkers. Chronic alcoholism is a very complex social and medical problem. I do not feel that all chronic alcoholics necessarily are poorly integrated individuals. Henderson and Gillespie state that "chronic alcoholism develops in a wide variety of persons; in some because of opportunity (barmen)—in others because of the social environment, and in others it begins as a reaction to difficulties or as an expression of a psychopathic disposition (manic-depressive, for example)."

Successful results measured by total abstinence have been obtained by many approaches both lay and medical. Occasionally chronic alcoholics have rehabilitated themselves, others have been helped by friends, some by religious conversion, and others by temperance pledges. In Switzerland remarkable results have been obtained by a more or less lay society, "The Blue Cross." Henderson and Gillespie<sup>1</sup> state that "psychological treatment has proved of great value in isolated cases more often than is generally realized."

### METHOD OF SELECTION

The handling of the alcoholic should always be based on the study of each individual as presenting a separate problem. All patients should not be treated alike, as one usually finds in many of the mass treatment "alcohol drink cures." Before therapy is decided upon, a complete investigation of the patient is made by obtaining all the available facts through a biographic history from birth to the present, including his place in the family, developmental data, presence or absence of disturbing behavior in childhood, adjustment in school, vocation and marriage, sexual life and its complications, religious habits and feeling, financial status, family situations and his emotional attitudes to them. The formal studies of the mental status include the general behavior, stream of activity, mood, special preoccupations, sensorium and intellectual resources and insight. A physical and especially a neurologic examination is made to determine the presence of any organic disease. A partial or more detailed personality study, summing up the patient's assets and liabilities, is then prepared. The family and other relatives are interviewed for additional helpful information. The material thus obtained and studied is then used as an aid in determining why this particular alcoholic

\* Read before the Section on Neurology and Psychiatry of the Society, October 6, 1938.

drinks and to what treatment approach the patient belongs.

What aids are used to fit the treatment to the individual? A very important one is the presence or absence of a definite desire to abstain. If this desire is present, is the patient honest, sincere, and genuine about it? What are his alcoholic contacts in business and social life? If the patient is associated with the alcohol industry one should not attempt to help and guide him at home but he should be placed in a rest-home farm. The make-up of the individual is, of course, very important in deciding the course to follow. He should have average or better intelligence; but a high degree of intellectual endowment alone is not enough, for there must be some degree of maturity in his emotional make-up. The apparent reason for drinking also aids one in selecting the patient. After studying many patients one finds one or more of the following apparent reasons:

1. As an escape from situations of life which he cannot face.
2. As evidence of a maladjusted personality (including sexual maladjustments).
3. As a development from social drinking to pathologic drinking.
4. As a symptom of a major abnormal mental state, such as a depressive or schizophrenic reaction, etc.
5. As an escape from incurable physical pain.
6. As a symptom of a constitutional inferior—a psychopathic personality, i.e., an individual who drinks because he likes alcohol, knows he cannot handle it, but does not care.

Many times one cannot determine any great and glaring mechanisms as the basis of why the drinker drinks; but the outstanding fact may be elicited that alcohol is taken to relieve a certain vague restlessness in the individual incident to friction between his biologic and emotional make-up and the ordinary strains of life.

The psychiatrist then determines to which of the following the individual belongs:

1. The individual who desires to abstain but who is unable to do so by himself. This patient has the desire to abstain and his life habits and

contacts are not too bad; he has good intelligence and some maturity in his make-up. This patient is to be handled in outside office practice type of psychotherapy.

2. The individual who desires to abstain but is unable to do so by himself, who has poor habits and contacts, good intelligence and some maturity in his make-up. This patient should be placed in a rest-home farm where psychotherapy including help and guidance away from his contacts is started.

3. The individual with good intelligence, with rather immature make-up, who should abstain but does not desire to do so. Most of this group have poor habits and contacts, although some do not. This patient should be placed on an alcohol farm, sanitarium, or hospital under the Inebriate Act, for a definite length of time.

4. Korsakow's psychosis and alcoholic deteriorated patients are treated in mental hospitals permanently.

5. Individuals with delirium tremens should be placed in acute psychopathic hospitals and then studied in the above way for future handling.

6. Feeble-minded individuals with history of repeated commitment to the workhouse or house of correction, after careful examination, should be handled by the penal system.

#### THE TREATMENT

Henderson and Gillespie,<sup>1</sup> in discussing the treatment of alcoholism, state: "The kind of treatment to be adopted, and the hope entertained for it, depends partly on the type of chronic alcoholic with whom one is dealing, and partly on the stage at which he comes (or is brought) for treatment. Careful investigation from a physical and a psychiatric viewpoint is an essential preliminary. Where alcohol is found to be a symptom of some disease, mental or physical, as general paralysis or a recurrent manic-depressive psychosis, the treatment is that of the underlying disease. When the alcoholic habit itself is in the forefront, the chief line of attack is a thorough investigation of the factors of the patient's life and personal-



ity. Usually the first step that should be insisted on is that the patient should place himself in a nursing home or in a hospital where he can be adequately supervised. This, of course, is usually what the patient refuses to do, but with the exercise of tact and patience it is often possible in the early stages to get the patient's coöperation. In our experience, the psychologic viewpoint is usually a revelation to the patient, and the physician who places it before him is at once at an advantage; for always the patient has been taught by his friends that his condition is simply one of moral turpitude, and nearly always he has personally come to regard his alcoholism as mysterious and inevitable. The patient's good will having been gradually obtained in this way, it is usually possible to show him the factors, psychologic and circumstantial, which have contributed to his illness; and to show him how they can be more satisfactorily dealt with. Advice also about the conduct of his life in future gives the patient back some of his self-confidence, which in the early stages of alcoholism has often been lost. Complete abstinence should be insisted on. The patient has usually to be taught that it is not unmanly to be abstinent. An avoidance of unnecessary opportunity for drinking is extremely important; for example, it is nearly hopeless to send him back to work as a bartender or an exciseman. The cultivation of hobbies and social recreation of a healthy kind to replace the discarded alcoholism is also important. When the immediate treatment is finished with and the patient returns to work, he should be encouraged to keep in touch with his medical adviser for a year or two."

Diethelm,<sup>2</sup> in discussing the treatment of alcoholism, states: "The treatment of chronic alcoholism has usually been directed along three lines: That of personality analysis, in an endeavor to find strivings which drove the patient into alcoholism; reëducation under enforced abstinence; and the use of drugs to change hypothetical chemical processes in the body or to produce a lasting disgust to alcohol through chemical alterations. The attempt to

treat with drugs can hardly be called scientific and is, therefore, usually administered by non-physicians. The large number of persons who seek help in such institutions is an indication of the failure of medical science to outline well-planned treatment.

"The only treatment which can be effective in all cases and which can be adjusted to the patient's individual needs is treatment which combines personality analysis and adjustment with training of healthier habits over a long period of time and under strict abstinence.

"The treatment can be divided into two phases. It should begin with immediate withdrawal from alcohol and be carried out under complete abstinence. Immediate withdrawal is psychologically important. It proves to the patient that there is no medical necessity for the use of alcohol in his case, and this realization is the beginning of his reëducation. The patient must break away from many of the ideas, attitudes and habits of his past life and learn that alcoholic drinks are not necessary for him to be cheerful and happy; that although they may help temporarily, in reality they increase his difficulties. . . .

"During the second phase of treatment, which deals primarily with reëducation of his habits, our knowledge of his personality should permit us to utilize an individualized approach. It is desirable that this can be carried out in an open institution in which the patient can lead a healthy life with a well-balanced routine, which includes work and suitable recreation and a healthy physical régime."

#### AUTHOR'S TREATMENT<sup>3,4,5</sup>

Treatment should begin with the immediate withdrawal of alcohol. The patient should be instantly informed that the goal is total abstinence, and all concerned must recognize that an individual who has been a pathologic drinker can never be a social drinker. A person who has once been an excessive drinker can never be a moderate, controlled, or a one-or-two-cocktails drinker. He must understand that there is a sacrifice of both time and money involved

in the treatment and that the road to the goal is a long and hard one, requiring patience, determination and absolute honesty of relationship between patient and physician. He is given to understand that failures in the past under other types of treatment mean nothing and are not obstacles to his attaining the goal, and that "once an alcoholic, always an alcoholic" is a general misstatement. For months, in some patients, the only headway made is the teaching of the fact that he can live without alcohol and this realization plays a great part in his re-education.

The patient reports to the psychiatrist's office at regular intervals, at first daily or three times a week and then less frequently.

He must be punctual, in spite of inclement weather, "previous engagements," or any other issues used so often for cancellations and postponements. Coming is his job!

Should he feel after a few weeks of abstinence that he can go along on his own and stop coming for his interviews, the physician will not call him or otherwise remind him of his negligence. The responsibility is his.

He must never test himself out to determine whether or not he has the problem "beat" by taking one drink. All drinking must be stopped instantly, without any tapering off.

When a large alcohol intake is abruptly stopped, sedatives are often necessary for a while to relieve the "shakes" and any jittery feeling which may follow the withdrawal. With this the sugar intake is definitely increased and the patient is also advised to take heavy doses of vitamin B.

Psychotherapy is continued throughout interviews. Other methods of handling the need for escape from situations are considered. Very frequently it is possible to modify poor vocational adjustment or irritating marital situations involving sexual incompatibilities, unwholesome living conditions with in-laws in the family life, parental conflict over the management of children, etc. The patient himself may not be conscious of the strains of all these things upon him. When it is not possible to

modify the situation, it is often possible to change the patient's attitude toward the difficulties he has to meet. Many a person becomes morbidly self-accusatory and fatalistic because of what he considers his failure to modify the unmodifiable. Such an individual may be greatly helped by mutual discussions, constructive criticism and wise guidance.

The interviews are further used to outline a recreational program and develop interest in new hobbies, diversions, club activities, etc. It is wise to have the patient at the beginning of the treatment give up his drinking friends and meeting places and replace them by non-drinking contacts. Later on he is allowed to visit friends and go to dinners where cocktails are served.

During all this time stress is laid upon the point that total abstinence is the only possible road to, and goal of, therapy.

The mate of the patient is interviewed many times, because the attitude toward drinking of wife or husband is extremely important. The mate's tact and diplomacy in handling past and present situations and episodes together with his intelligent coöperation in the planning of new activities are major therapeutic aids. One cannot stress too much the significance of the mate's attitude and coöperation. Many a poor result of treatment is due to the absence of any insight whatever in wife or husband.

During the early months of treatment the patient uses as a splint the physician rather than the alcohol which he has previously utilized. Throughout the treatment there is established a close personal relationship between the patient and the doctor. In this way the latter develops a definite knowledge of how the patient "ticks" and the patient derives confidence and helpfulness in realizing the physician's understanding of his own particular problems.

The patient who comes with an honest desire for help should be approached with sympathy and kindness that eliminates ideas of punishment, fears of failure and attitudes of inferiority. Patient and physician should meet each other halfway with frankness and mutual expectation of confidence. The psychiatrist's tact and di-



plomacy in presenting to the patient the liabilities of his make-up is extremely important.

The interviews are used for many purposes, although one cannot put in words exactly what takes place during an interview. Aside from the above psychotherapy and obtaining all the available information necessary to complete the survey of the individual, the patient is indirectly forming new habits and breaking down old ones. The interviews are also used for the permanent development of proper attitude, and the patient learns to be guided by his judgment rather than his emotions. With many patients the interviews are used to discuss the individual alcohol sensitivity. A great deal of the time is also spent on individual personality disciplining. The thought processes preceding the last alcoholic bout and other bouts are gone into also. While directing the attitude of the patient to the fact that total abstinence for life is the goal of therapy, therapy should indirectly divert the

mind of the patient from the whole subject of drinking.

#### SUMMARY

The results obtained with the approach described have been encouragingly satisfactory. The treatment (although individual) in general embodies personality analysis and adjustment, development of proper attitude to alcohol and psychogenic strains, and new habit formation which breaks down indirectly the old habit associations.

#### BIBLIOGRAPHY

1. HENDERSON, D. K., AND GILLESPIE, R. D.: A Text-Book of Psychiatry for Students and Practitioners. London, Oxford, 1936.
2. DIETHELM, O.: Treatment in Psychiatry. New York, Macmillan, 1936.
3. SELIGER, R. V.: Understanding the Drinker. The Councilor, Baltimore Council of Social Agencies, September, 1937.
4. SELIGER, R. V.: Working with the Alcoholic. Read before Am. Psychopathological Assn. Meeting in Atlantic City, May 1938. To be published in Medical Record.
5. SELIGER, R. V.: The Alcoholic in the Community. Am. J. Psychiat., 1938, 95, No. 3.

#### ABSTRACT OF PAPER READ AT THE JOINT MEETING OF THE SOCIETY AND THE BALTIMORE CITY MEDICAL SOCIETY, NOVEMBER 16, 1938 IN WASHINGTON, D. C.

"SLOW EPINEPHRIN." A NEW SLOWLY ABSORBED PREPARATION OF EPINEPHRIN," **Edmund L. Keeney, M.D.**, Protein Clinic, Johns Hopkins Medical School and Hospital.

With the dramatic introduction of protamine insulin, there has developed a revived interest among medical investigators to procure delayed absorption for other hormones. It is only fitting and proper that a portion of such enthusiasm should be directed toward epinephrin, the first and perhaps most commonly used hormone. The small size and the lability of the epinephrin molecule offers a notable stumbling block in achieving such a goal, and it is because of this obstacle that I have designed to solve the problem in a different manner.

Watery solutions are rapidly absorbed because they spread as soon as injected, thereby forming a large surface area for contact with the tissues. The diffusion of oily suspensions through the tissues is hindered by the film of oil. The oil also prolongs absorption by restricting the contact of the compound with the tissues.

Epinephrin is insoluble in oil and for this reason the integrity of the molecule and its physiologic activity in such a vehicle should be unaltered. It is logical, then,

to predict that a suspension of epinephrin in oil should be slowly absorbed and should exhibit its normal physiologic activity over a prolonged period of time. With this in mind, a suspension of powdered epinephrin in vegetable oil was prepared so that each c.c. of oil contained 2.0 mg. of epinephrin. This suspension I have previously called "slow epinephrin,"<sup>1,2</sup> and for sake of uniformity it will be referred to as such throughout this paper.

There is very little data in the literature pertaining to the absorption of oil injected subcutaneously or intramuscularly. However, from purely clinical observations it is apparent that oil as an injectant is definitely irritating in individuals. Although there is no scientific work on record which endorses one vegetable oil over another as a vehicle for an injectant, peanut oil is generally considered to be less irritating than others. This is most likely a conclusion derived from the comparative clinical trial of the various oily vehicles used in the female hormone and bismuth preparations. Therefore, peanut oil has been used in preparing the suspension of epinephrin in oil.

In an attempt to prove that "slow epinephrin" was slowly absorbed and possessed a prolonged effectiveness, it was administered to 25 chronic asthmatic patients who had been taking regularly 2 to 6 injections of epinephrin hydrochloride every night and 2 to 4 injections

(Continued on page 63)



# THE MEASUREMENT OF THE VELOCITY OF BLOOD FLOW FROM THE ARM TO LUNG BY THE USE OF PARALDEHYDE\*

## (A PRELIMINARY REPORT)

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Since Blumgart and his associates<sup>1,2,3</sup> made their first studies on blood velocity in 1927, more convenient and practical clinical methods have been devised. The conclusion to be drawn from these studies is that a decreased blood velocity is the earliest reliable sign of heart failure, often preceding the development of symptoms.

Increase in blood velocity accompanies hyperthyroidism, fever and anemia. Normal blood velocity is found in hypertension, bronchial asthma, nephritis with edema, and in compensated heart disease. A decrease in blood velocity is noted in heart failure, myxedema, and polycythemia.<sup>4</sup> Numerous investigations have shown the value of these circulation tests as a means of recognizing "incipient" right ventricular failure and as an aid in the differential diagnosis of pulmonary and cardiac disease.<sup>5</sup>

The basic principle of all circulation tests is the measurement of the time which elapses between the intravenous injection of a foreign substance at one point, and its perception by the subject or examiner, or both, at another point. The injection is usually made in the right antecubital vein. The two common points of perception are the lung and the tongue. The time interval from the moment of injection to the moment of appreciation is measured accurately with a stop watch, expressed in seconds.

Two circulation time tests are of clinical importance. The first is the "arm to tongue" time. The arm to tongue time measures the speed required by a foreign substance to traverse a pathway through the peripheral veins, superior vena cava, right auricle, right ventricle, pulmonary artery, pulmonary capillaries, pulmonary veins, left auricle, left ventricle, and finally to the peripheral arterial capillary bed of the tongue, where it is perceived as a sensation.

This measurement reflects the functional activity of the left ventricle.

The second test is the "arm to lung" time. The arm to lung time measures the time required by a foreign substance to go from the antecubital vein to the pulmonary capillaries. This measurement reflects the functional activity of the right ventricle.

The present paper is devoted to the study of the arm to lung time by means of paraldehyde. Its purpose is to demonstrate that this method is accurate and practical and is superior to methods previously described for the estimation of arm to lung time.

Since Hitzig<sup>6</sup> introduced ether as an agent for the estimation of the circulation time from the antecubital vein to the pulmonary capillaries, numerous agents have been recommended.<sup>7</sup> Nevertheless, the ether arm to lung time remains the most frequently used method at the present time. However helpful this procedure may be, the intravenous injection of ether has been associated in several instances with untoward reactions. Hitzig<sup>6</sup> reported a painful, creeping sensation along the course of the vein. Miller<sup>7</sup> noted that venous thrombosis would occur at the site of the injection. In cardiac patients ether produced severe precordial pain, transient in character. Leinhardt<sup>8</sup> reported a fatality resulting from the injection of 2.5 c.c. of a 10 per cent solution of ether in saline following a saccharin arm to tongue test. In the writer's experience, the perivascular infiltration of ether resulted in a severe antecubital inflammation of two weeks' duration. Such unpleasant reactions tend to detract from its usefulness.

The use of paraldehyde as an agent for the estimation of the circulation time first suggested itself to the author while examining a patient who had received the Kane-Roth paraldehyde, benzyl alcohol obstetrical anesthesia. The per-

\* Read before the Washington Heart Association, January 27, 1939.

sistent pungent odor of paraldehyde noted on the breath suggested that a small quantity if injected intravenously might be detected by its characteristic odor on reaching the lungs. The time measured in seconds would represent the arm to lung time.

While making these studies the writer's attention was drawn to a very recent publication in which the use of paraldehyde intravenously as an arm to lung circulation test was first described by Candel.<sup>9</sup> The writer wishes to confirm this recent report and to present further evidence of its value and practicability for such measurements. A refinement in technic and a method of storage for this solution is also described. It is believed that the application of this procedure with its refinement will reduce the number of unpleasant reactions to a minimum.

Paraldehyde U.S.P. ( $C_6H_{12}O_3$ ) is a polymer of acetaldehyde ( $CH_3CHO$ ). It is a colorless liquid of a pungent odor, soluble in alcohol and ether. It is antiseptic and does not require any preparation for its use intravenously. Clinicians and pharmacologists who have used the drug for sedation consider paraldehyde to be a relatively nontoxic substance. Sollman<sup>10</sup> states that the toxicity of paraldehyde is low and as much as 100 c.c. orally produces only very prolonged sleep. Internally, it resembles the action of alcohol, but is a much more powerful hypnotic and seldom causes excitement.

Paraldehyde has a very mild depressant action on the heart. A comparative study made by Roth<sup>11</sup> on the relative toxic effects of paraldehyde, chloral hydrate, and sodium amytal on the sinoauricular-ventricular preparation from a spiny dogfish (*Squalus acanthias*) showed this to be true. He found, on the basis of their molecular weights, that the real comparative toxicity of paraldehyde to the barbiturate is about 0.01 to 1, and of paraldehyde to chloral hydrate about 0.25 to 1. This relative nontoxic property of paraldehyde on the heart further enhances its value as a circulatory test.

While paraldehyde has been known since 1882, priority for its intravenous use is claimed by Noel and Souttar.<sup>12</sup> These authors in 1912 injected 15 c.c. of paraldehyde in 15 c.c. of ether and 15 c.c. of a 1 per cent solution of saline. Anes-

thesia was effective in 40 seconds and short operations were possible. Atkey<sup>13</sup> in 1913 gave 5 c.c. of paraldehyde in 150 c.c. of saline solution to control convulsions of tetanus. This dose was repeated frequently and the patient ultimately recovered. Honan and Hassler<sup>14</sup> in 1913 gave intravenously a 2.5 to 3 per cent solution of paraldehyde alone, and with ether. Collier,<sup>15</sup> from the Craig Colony of Epileptics, reported in 1914 the intravenous use of paraldehyde in ether in 7 cases. Cole<sup>16</sup> in the same year reported 6 cases in which 1 to 5 c.c. of paraldehyde was given intravenously. In 1922 Caldwell<sup>17</sup> reported the intravenous use of undiluted paraldehyde in a case of eclampsia without untoward effects. Two to 3 c.c. caused "prompt" sleep, the blood pressure dropped 15 to 20 mm. of mercury, and he was able to make such necessary manipulations as phlebotomy and gastric gavage without disturbance or excitement. Its use as a general anesthetic was recommended by Nit-zescu<sup>18</sup> in 1932. Beauchemin, Springer, and Elliott<sup>19</sup> gave undiluted paraldehyde intravenously as a general anesthetic to 55 patients. As much as 19 c.c. was given at the rate of 2 c.c. per second without untoward reaction.

While the administration of paraldehyde intravenously is not novel, its use as a circulatory test for the estimation of the velocity of blood flow of the lesser circuit was only recently described by Candel.<sup>9</sup> The writer, who had been studying this method for some time before the publication of Candel's work, wishes to confirm the original work and to recommend a technic which differs from that described by Candel. A method of storage and dosage of paraldehyde is recommended, which, it is believed, will reduce the number of unpleasant reactions.

Paraldehyde, when exposed to light, decomposes into acetaldehyde, which is toxic and has the characteristic property of precipitating proteins. It is believed that venous thrombosis may be due to the presence of acetaldehyde in the solution. In order to avoid this unpleasant complication, paraldehyde should be stored in a dark glass bottle and kept in a cool place. A rubber vaccine cap or cork should be used to seal the mouth of the bottle. The use of such a cork



prevents contamination and permits the withdrawal of the solution from the bottle with ease.

The experiments were performed on ambulatory patients, free of pulmonary or cardiac disease. The arm to tongue circulation time was first measured as recommended by Goldberg,<sup>20</sup> and will be described later. Only those patients having a normal arm to tongue circulation time (9 to 16 seconds) were given paraldehyde intravenously. This was done to make certain that no circulatory disturbance existed. The arm to lung time was then measured by means of paraldehyde and compared with the normal arm to lung time reported by other investigators.

#### METHOD

Each patient is made to rest for 20 minutes. With the right arm resting on a small pillow on a level with the midaxillary line, 3 to 5 c.c. of a 20 per cent solution of calcium gluconogalactogluconate\* is injected rapidly into the right antecubital vein with an 18-gauge needle. The circulation is timed from the beginning of the injection to the first moment when a sensation of heat is noted at the back of the throat. The time interval is measured by a stop watch. With the needle in situ, a syringe containing 0.5 c.c. of undiluted paraldehyde U.S.P. is fitted to the needle. The subject is then told to relax, breathe normally, and to announce the moment when an unusual odor is first perceived. The subject is warned that he may be seized with a paroxysm of coughing, but is reassured that it will be of brief duration. The end point is the perception of the pungent odor of the paraldehyde by both the patient and the examiner. The circulation rate is again timed by a stop watch from the beginning of the injection to the moment when the odor is recognized. This test may be repeated in 5 to 10 minutes.

It is believed that the use of an indicator to detect the presence of paraldehyde in the breath would enhance the objective value of the test. Methyl orange has been tried for this purpose. A piece of filter paper impregnated with methyl

orange, when held in front of a bottle of paraldehyde or the mouth of an anesthetized dog, will turn pink. The latent period for this phenomenon to appear, however, vitiates its use. Numerous indicators are now being tried by the writer, and it is hoped that finding a more sensitive indicator will increase its value as an objective test.

#### REACTIONS

Although the literature refers to the possibility of serious reactions accompanying the intravenous administration of calcium gluconate, no serious reactions have been reported incidental to its use. Goldberg in a series of 500 cases observed no unpleasant reactions. In a case of myocardial infarction, Baer and Slipakoff<sup>21</sup> observed a severe precordial pain following the initial injection of calcium gluconate. In the present series of cases no unpleasant reactions were noted.

The use of paraldehyde intravenously produced several unpleasant reactions in the 100 cases reported by Candel. Dizziness and blurring of vision were noted in 3 cases. Three patients fell asleep immediately after the injection of 1.4 c.c. of paraldehyde (the dose used by Candel). Another 3 cases developed local venous thrombosis. These reactions, it is believed, may have been due to the much larger dose than is used by the present writer.

The injection of 0.5 c.c. of paraldehyde intravenously caused a paroxysm of coughing, which in cardiac patients may be very disagreeable. However, it is only momentary and helpful to the examiner in that this sign increases the objectivity of the test. One case complained of vertigo associated with ataxia. Another patient had a similar reaction when the test was repeated too soon. It should not be repeated before 5 to 10 minutes.

In one case the use of 1 c.c. of paraldehyde produced transient syncope. This unexpected reaction discouraged the use of doses larger than 0.5 c.c.

The paravenous extravasation of paraldehyde produces severe pain that lasts 10 to 15 minutes and is accompanied by an erythema of 24 hours' duration. Local applications are not necessary.

\* Neocalglucon (brand of calcium gluconogalactogluconate) 20 per cent solution, supplied through the courtesy of the Sandoz Chemical Works, Inc.



Care in the administration of this drug will eliminate this unpleasant reaction.

Table 1 lists the normal circulation times obtained by various observers, using the ether arm to lung method and the paraldehyde arm to lung method.

TABLE 1

| INVESTIGATOR                   | YEAR | AGENT       | RANGE | AVERAGE* |
|--------------------------------|------|-------------|-------|----------|
| Hitzig.....                    | 1934 | Ether       | 3-8   | 5.5      |
| Miller.....                    | 1934 | Ether       | 3-9   | 6-9      |
| Webb, Sheinfeld, and Cohn..... | 1936 | Ether       | 4-8   | 6.3      |
| Lian, Facquet.....             | 1936 | Ether       | 4-8   | 5.7      |
| Baer, Slipakoff.....           | 1938 | Ether       | 4-8   | 5.7      |
| Candel.....                    | 1938 | Paraldehyde | 3-9.5 | 6.0      |
| Manchester.....                | 1938 | Paraldehyde | 4-8   | 6.0      |

\* All averages are expressed in seconds.

In table 2 are listed the circulation times of 25 patients in whom normal arm to tongue circulation times were obtained and the arm to lung time using paraldehyde. All time intervals are expressed in seconds.

TABLE 2

| NUMBER OF CASES | ARM TO LUNG | ARM TO TONGUE |
|-----------------|-------------|---------------|
| 5               | 4-5         | 9-16          |
| 8               | 5-6         | 10-13         |
| 6               | 6-7         | 10-15         |
| 6               | 7-8         | 10-15         |

### DISCUSSION

Evidence is presented illustrating the practicability of paraldehyde as an agent in the estimation of the arm to lung circulation time. Because of its nontoxic quality, it seems an ideal agent for such use. Its pungent odor is keenly appreciated by the investigator as well as the patient, thus removing it from the realm of subjectivity. Its association with a paroxysm of coughing further increases this objectivity.

The antiseptic properties of paraldehyde make any special preparation unnecessary, and so it may be used directly from the bottle. Only paraldehyde U.S.P. should be used because it is free of acetaldehyde. The solution should be kept in a dark bottle and well stoppered. The use of a rubber cap prevents contamination and allows ready withdrawal of the solution. These

precautions, if followed, will reduce the number of complications to a minimum.

In doses of 0.5 c.c. no untoward reactions have been noted in over 25 cases. The use of more than 0.5 c.c. intravenously has not been necessary in the present series. Caldwell has shown that the use of larger doses (such as 2 to 3 c.c.) intravenously produces profound sleep. In a recent *Interns Handbook*,<sup>22</sup> 1 c.c. of paraldehyde intravenously is recommended to produce profound hypnosis. In my experience 1 c.c. produced loss of consciousness for a few minutes in one case.

Larger doses as recommended in a previous paper may discourage future studies with this method. If unpleasant reactions are associated with this test, patients may resent reexamination, so necessary for noting progress made while under treatment. These reactions can be reduced to a minimum if a dose of 0.5 c.c. is used and care in storage is followed.

A comparison of paraldehyde arm to lung time with that of ether arm to lung time shows the former method to be as accurate and free of reactions when used in proper doses. The average arm to lung time with paraldehyde is 6 seconds. This compares favorably with other methods that have been described.

### SUMMARY

Paraldehyde undiluted when given by vein to measure the velocity of blood flow from the antecubital vein to the pulmonary capillaries has been found to be an accurate, simple, and safe procedure. Its action is noted by the subjective and objective perception of its pungent odor and a paroxysm of coughing. When used in doses of 0.5 c.c., it may be repeated in 5 to 10 minutes without danger to the patient. A method for storage of this drug is recommended to prevent unpleasant reactions.

The results thus far obtained in the use of paraldehyde for the measurement of the velocity of blood flow of the lesser circuit warrant the further study of paraldehyde as an agent in this test.

The writer wishes to acknowledge with appreciation the help given by Dr. George B. Roth in the preparation of this paper.

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## SOME BACTERIOLOGIC ASPECTS OF COLITIS\*

ALAN FRANK KREGLOW, M.D.

*Washington*

Investigators and interested medical scientific workers have studied the bacteriology of the colon for many years and it has been a subject for controversial discussion. As early as 1899 Adami recognized that there were foreign organisms in the colon in certain pathologic conditions and suggested the possibility of their pathogenic effect. In the forty years that have passed authorities have come to no unified agreement as to the etiology of diseases of the colon in relation to various pathogenic organisms growing therein.

Everyone here tonight, I believe, will admit that there is such a thing as an acute disease of the colon with inflammatory changes of the mucous membrane, these changes producing an exudate consisting of mucus and pus. The appearance of this mucous membrane is typical of the usual phenomena of an acute infectious disease. Along with the usual *B. coli* and other saprophytes, if cultures taken from this mucous membrane also showed a culture of *Streptococcus viridans* strongly predominating, I am sure we would all recognize this as an acute infectious disease of the colon, and that the streptococcus is the causative agent in the production of the disease.

Now, if later the patient attained some immunity to the toxin of this streptococcus, or if the organism became a little less virulent, the colitis might pass into a subacute stage, and this might pass into a chronic state, wherein this streptococcus or other pathogenic organisms might remain for a considerably long time. It also seems highly probable that this may play a part in the primary production of disease of the colon and in secondary effects such as toxicity on distant parts of the body. This could be compared to other foci of infection producing disease in distant parts of the body. I refer to such foci of infection as crypts and lymphoid tissue of the

tonsils, pus pockets around the teeth or infection in the accessory nasal sinuses. Any of these may harbor a chronic infection. It is a vast subject and we could couple it to that of arthritic syndromes and other diseases which we have commonly classed under foci of infection. The difficulty that we have is to know when the presence of a certain organism is or is not a cause of disease and what part it plays with other causes in producing abnormal conditions of the body, many of which may be far distant from the colon or may be systemic in type.

For the past 12 years records have been kept carefully with the purpose that at some future date accurate data might be available. Such data might aid in classifying organisms found on culture as an etiologic agent of the disease presented, not only in the form of colitis in chronic or subacute form, but in some of the chronic systemic disorders of which rheumatoid arthritis is typical. It was important to know how and when certain organisms played a part, if any, in the colitis which accompanied a diverticulitis or diverticulosis of the colon, or any other form of colitis. It was desired to fix a simple accurate method of evaluating the kind and amount of pathogenicity of the organisms found in the bowel and if possible an effective method of treatment. During these 12 years stool cultures were taken on something under 400 cases using various technics, including lavage of the colon, by competent bacteriologists of this city. Several laboratories were used. Organisms most commonly encountered were varieties of the streptococcus group, the staphylococcus group, the pneumococcus, *Bacillus pyocyaneus* and the colon groups. It would require many hours to discuss the various technics used in obtaining the cultures and the possibility of contamination. The bacteriologic methods which were used have been checked and rechecked by many workers, and no attempt will be made to discuss the details of this plan. When an organism is found

\* Read before the Section on Gastroenterology of the Society, October 10, 1938.

in pure culture, growing with many colonies, from a colon culture, it still remains to be proven that this organism is a pathogenic factor in the causation of the patient's disease. Intradermal skin tests of autogenous vaccine are probably of value in determining the patient's sensitivity to the organism which he himself is harboring. This autogenous vaccine, a suspension of the bacteria cultured from the patient's colon, is injected alongside a stock vaccine of the same type of organism. There is a difference in various types of the same organism. Whether it be that the patient is affected by the one organism to which he is sensitive or whether it be that reculture of the same organism in his bowel allows it to gain virulence will have to be determined later.

The figures which I am about to present will show that a colon-cultured organism which gives a four plus intradermal reaction before treatment gives a negative or much improved reaction after administration of this autogenous vaccine.

#### 1. Pathogenic Organisms Obtained by Culture in 380 Cases

|                                                 | per cent |
|-------------------------------------------------|----------|
| Negative.....                                   | 22       |
| Positive.....                                   | 78       |
| Streptococcus (all varieties).....              | 64       |
| Staphylococcus (aureus and albus).....          | 6        |
| Bacillus pyocyaneus.....                        | 2        |
| Bargen's Bacillus (nonacute nonulcerative)..... | 4        |

|                                                                                       |    |
|---------------------------------------------------------------------------------------|----|
| Pneumococcus.....                                                                     | 1  |
| Others.....                                                                           | 1  |
| 2. Reaction of Streptococcal Vaccines by Intradermal Skin Tests                       |    |
| Autogenous greater than stock.....                                                    | 95 |
| Stock greater than autogenous.....                                                    | 3  |
| Equal (using same type organism).....                                                 | 2  |
| 3. Results of Skin Tests in 380 Cases                                                 |    |
| Of value in.....                                                                      | 77 |
| Of no value in.....                                                                   | 23 |
| 4. Change of Skin Test after Treatment (by autogenous vaccine and other medication)   |    |
| Negative completely.....                                                              | 66 |
| Improved.....                                                                         | 27 |
| No change.....                                                                        | 6  |
| Worse.....                                                                            | 1  |
| 5. Methods of Obtaining Cultures                                                      |    |
| a. Natural stool                                                                      |    |
| b. Loose stool (after laxative)                                                       |    |
| c. Colon tube in proximal portion of bowel (Irrigation of cecum and transverse colon) |    |
| d. Physiologic salt solution enema                                                    |    |
| e. Two-way irrigation, continuous with culture of clear washings                      |    |
| f. Aspiration or swab through sigmoidoscope applied to crypts of local lesions        |    |

In conclusion, I can say that patients in whom a vaccine was used showed considerably more improvement in a shorter time than those on which vaccine was not used. Clear colon flushings proved to be the best method of taking cultures. Autogenous vaccines were more effective in the streptococcal group.

#### ABSTRACT OF PAPER READ BEFORE THE SOCIETY, OCTOBER 12, 1938

##### "PATHOLOGY OF ROCKY MOUNTAIN SPOTTED FEVER,"

Ralph D. Lillie, M.D., National Institute of Health, Washington, D. C.

The report was based on a series of 12 autopsies studied since 1930 in the Washington, D. C., area.

The macular eruption seen in life was replaced by a violaceous mottling deepening into lividity of the dependent areas. Petechiae were seen in half the cases, scrotal gangrene occasionally, obstructive jaundice resulting from subacute pancreatitis once.

Serofibrinous serositis was seen in 2 complicated cases. Petechial eruptions were seen in several cases, most often pleural, then pericardial and once peritoneal, usually visceral in all.

The lungs presented congestion and edema with vaguely bordered soft red pneumonic nodules in some

cases, rarely firmer grayish red nodules. Most cases showed microscopic, if not gross, foci of serosanguinopurulent pneumonia with little fibrin.

Heart muscle is often softened, the right heart often dilated, and there is an interstitial myocarditis characterized by lymphocytic exudate, vascular endothelial swelling and occasional thrombocytosis.

The liver was inconstantly somewhat enlarged, cloudy or fatty in some cases. Microscopically, small thrombi were sometimes seen, more often erythrophagia, and periportal lymphocytic infiltration. Focal necrosis and rickettsiae in Kupffer's cells occurred in 1 case.

The pancreas was often normal, occasionally showed focal vascular lesions, and once a proliferative, exudative, interstitial pancreatitis.

The spleen was usually moderately enlarged, from normal to thrice normal weight, congested, firm to dif-

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### THE PRESIDENT'S MESSAGE

#### OPPORTUNITIES

Our Society is about to engage in an enterprise offering peculiar opportunities to the members. If our medical service program should prove to be economically sound and perfectly satisfactory to the participating doctors and subscribing beneficiaries, it would be gratifying indeed. It would also be a unique human experience. This, however, is not to be expected. No human institution has as yet provided such an example of perfection. That the plan should prove to be workable and sufficiently satisfactory to doctors and patients so that both parties may desire to continue and improve the relationship is all that can be expected. Such a degree of success offers an opportunity worthy of the best efforts of all interested parties. However, there are other inherent opportunities not immediately apparent, but of even more significant value than simple personal benefit.

The comradeship of work is an element which is rarely taken into account, but which is of great importance from many points of view. Men who work together have not only the same interests, but are likely to develop kinship of thought and feeling.

Such an experience and such a development are much to be desired. This will not be acquired by gymnastic exercise but will occur only as a result of mental and emotional discipline, which is not so easy.

We know that material obstacles may be

easily comprehended and directly attacked by old, familiar types of reaction. Problems involving personal interrelationships are more difficult. Even the words of our most sententious phrases arranged to pose a human problem are overloaded with the sense of the physical and concrete. We "mobilize and organize" in order that we may "overcome obstacles," and we "war" against disease. Of course, the physical factor is still present and requires for its cancellation a physical agent, such as energy stored in accumulated savings of money.

However, modern problems are not so simple, but are exceedingly complex. Peace, security and normal social progress are jeopardized, not so much by lack of material things as by the involvement of confusing, menacing interrelationships of diverse personalities.

"The bramble in the path, and the scorpion in the bush." The practice of patriotic statecraft and benevolence is hindered or perverted by such interpersonal obstacles. These may be overcome if sincere men will compose their honest differences by conceding a point occasionally—even when they are in the right—for the sake of reaching a socially worthy mutual goal. Such practice will develop increased confidence and mutual trust, and will lead to the enjoyment of gratifying personal and professional relationships between members of the profession and between the profession and the patients.

"There is no real freedom save that based upon discipline."

"The gods sell anything to everybody at a fair price"—and give away nothing.

WILLIAM J. MALLORY, M.D.

### FIRST IMPRESSIONS OR PROPAGANDA

No statement is more frequently heard these days than that "organized medicine" is opposed to any change in present methods of medical practice. This is, of course, untrue. The record shows that in the past ten years medical organizations throughout this country have actively interested themselves in social and economic problems as they relate to medicine.

Following the release of the Report of the Committee on the Cost of Medical Care in 1932, an extraordinary effort was made by medical organizations to get at the facts about the costs of sickness and distribution of medical services, with the result that a number of medical societies decided to experiment with so-called medical service plans. In several cities throughout the country plans were established to aid the low income group. Many of these experiments did not measure up to expectations. When this became apparent, medical societies announced their intention to proceed further in an attempt to evolve better methods of providing medical care to the low income group. At the present time approximately 120 new medical service programs are contemplated by medical societies.

Whether or not it is agreed that this approach to the problems involved in medical care has been the best, the fact is that it has not been reactionary. Other activities of medical societies also belie this charge. For example, in the field of industrial medicine and public health, the medical profession has in recent years made many contributions to knowledge and progress. Yet through the press and over the radio the same old plaint is heard—the medical profession is content to oppose and nothing else.

Only recently an editorial appeared in a Washington newspaper concerning the state of the British Health Insurance System after a quarter of a century. The writer had much praise for the British system, and in concluding his editorial stated that he hoped the medical profession in this country would not dismiss the report which had just been submitted by the British Medical Association without reading it.

We wonder if this attitude toward medicine is due to what is so often called "first impressions." These often stick in the mind long after they have been discredited and are most difficult to eradicate. If this be true, there is some excuse for the misstatements which we so often hear. However, if they are being kept alive for the purpose of advancing the plans of those who would place medicine under political control, it is most reprehensible and the guilty should be

exposed for their insincerity. We suspect there is a combination of both. Whichever it is, we are certain that the public will eventually be made aware of the truth.

#### THERE IS NO SUBSTITUTE

The physician is an individualist, and in the interest of the patient must always remain so. For there is no substitute for the personal responsibility of the conscientious and qualified practitioner of medicine to his patient. Anything which would interfere with this relationship will prove detrimental if not dangerous to public welfare. Organizations or bureaus, governmental or private, cannot successfully direct or control the actual practice of medicine, nor will it ever be possible for them to do so. That must always remain an individual matter. Otherwise, it will be a sad day for the patient.

Paradoxical though it may seem, physicians cannot meet their own problems in this manner, for the medical profession is no different than other groups which particularly at this time find organization essential. They have learned, as the medical profession has and is learning, that there is no substitute for unity and the efficient conduct of their affairs. So we see on every hand powerful organized units representing the professions, business and labor.

Now there are some regrettable features in this connection so far as the doctor is concerned. He may, if he has been in practice many years, long for the "good old days" when every imaginable subject was discussed at medical society meetings. There was really no need to worry about such matters as efficiency, because it didn't matter. With the passing of desultory meetings, something has been lost to him in the way of color and interest. But, as so often happens, conditions made changes a necessity and the need for better organization is becoming more and more apparent.

Favorable comments which have been made by our members in regard to recent business meetings have been most encouraging to officers of the Society. Every effort has been made to conduct them in a dignified yet businesslike



manner. It is hoped that this procedure will continue to have the approval of the membership. We believe it is vital not only to the welfare of our organization but to that of individual practitioners in this community.

Efficient organization may mean the difference between our deciding the future of medicine in this community or someone else doing it.

## TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The meeting of the Washington Society of Pathologists was called to order by the Vice President, Dr. H. E. Ragle, at 1:30 p.m., Saturday, December 3, 1938, in the Army Medical Museum. Present were 26 members and 2 guests, Dr. Gerald McAteer and Captain Richard P. Mason.

Dr. Thomas Crahan, National Institute of Health, and Captain Robert La T. Cavanaugh, Fort Myer, Virginia, were unanimously elected to Associate Membership.

### *Presentation of Cases*

Dr. H. E. Ragle presented 25 microscopic sections (no. 13966) from the case of a 7-year-old child who had exhibited symptoms of abdominal tumor and infection for about a month. At first liver abscess was considered; however, the tumor became progressively larger. All liver function tests were normal. There was no jaundice at any time. The leukocyte count varied from 9,000 to 20,000, the red cell count from 3,500,000 to 4,500,000. Urine examinations were normal throughout. X-ray examination showed a large tumor mass on the right side of abdomen, but the liver, kidney, etc., could not be differentiated. There was no history of hematuria throughout the course of the disease. The clinical diagnosis was hypernephroma of the right kidney. After removal the retroperitoneal tumor mass measured 19 by 12.5 cm., weighed 1063 grams and was situated in the upper pole of right kidney. The mass was still encapsulated inside the renal cortex, was firm, and contained a few small cystic and hemorrhagic areas. Microscopic examination showed tubular glands in a spindle cell and round cell stroma with myxomatous areas. The pathologic diagnosis was Wilms' tumor of the kidney.

Dr. T. L. Perrin presented 25 microscopic sections (S-9962) of a fallopian tube from an Indian housewife, aged 24, who had complained of lower abdominal pain for a year; during the last two weeks she complained of severe pain in the lower right quadrant. The husband had syphilis. At operation the surgeon described both fallopian tubes as distended, chronically inflamed, and bound down by adhesions. The left

ovary was bound to the left tube. The appendix was distended throughout its entire length and chronically inflamed. The surgical diagnosis was chronic appendicitis and chronic bilateral salpingo-oöphoritis.

Microscopic examination shows chronic salpingitis with foreign body granulomas, chronic appendicitis, and follicular cysts of the ovary. Both tubes show thickened villi containing numerous tuberculoid structures composed of epithelioid and giant cells; the latter are numerous and sometimes are the chief component of the tubercles; they frequently contain anisotropic crystalline material in various forms, from radiating spicules to amorphous masses with focal calcification. Lymphocytes are fairly numerous in and around the tubercles; necrosis is rare. The muscularis shows rare tubercles, and one is seen subperitoneally some distance from the tube. There is marked lymphocyte and plasma cell infiltration of the villi. Acid-fast bacilli are not seen in the tubercles after 20 minutes' search. There is nothing in the sections to account for the presence of the foreign body granulomas. The ovary is moderately atrophic and shows few follicles, either mature or immature; there are several cystic follicles up to 6 mm. in diameter. No tubercles are seen in the ovary; there is a serosal cyst, 1 cm. in diameter. The appendix contains a moderate amount of lymphoid tissue, with no particular activity. Eosinophiles are slightly increased in the lamina propria. The submucosa is somewhat fibrotic; the serosa of the tip shows focal scarring. The appendix is slightly dilated.

In the discussion, it was pointed out that with polarized light the foreign body material in the fallopian tube resembled silica. The origin of the material was questioned and it was suggested that vaginal insertion of sand, said to be an occasionally practiced treatment for sterility in this tribe, may have been the cause. The diagnosis of silico-salpingo-granulomatosis was suggested.

Dr. Walter Freeman presented 25 microscopic slides (LN-366) and the gross specimen from the case of a white male, aged 44, who began to suffer nausea and vomiting in August, 1937. Gastrointestinal X-ray studies were indefinite and at one time were interpreted as showing a tumor of the stomach, another time an ulcer, another time nothing. However, there was no free hydrochloric acid, and lactic acid was present together with slight retention of gastric content. The attacks of nausea and vomiting were at times associated with dizziness and later with headaches and attacks of loss of consciousness.

On examination March 25, 1938 there were bilateral choked discs, marked ataxia, a cerebellar gait and positive Babinski sign on the right. The patient complained of great stiffness of the neck so that he had to drink liquids through a straw. During one of these fainting attacks, nystagmus to the right appeared.

Cerebellar exploration was undertaken on April 1, 1938. A tumor was found presenting between the lobes of the cerebellum, grayish and semitranslucent, occupying the fourth ventricle and extending down through the foramen magnum. The tumor seemed attached to the floor of the fourth ventricle and was impossible to remove. The patient improved following operation. The stiffness of the neck disappeared, but the unsteadiness remained. About July, 1938 he gradually got worse and was again admitted to the hospital on October 3, but died the next day of pneumonia.



Autopsy disclosed bilateral bronchopneumonia, possibly due to aspiration, and no disease of the stomach or duodenum. On removal of the brain, it was found that the tumor had grown considerably in size, filling out the space left by the suboccipital decompression and extending down into the spinal canal. It had its attachment from the dorsal aspect of the medulla chiefly on the left side and tended to block off the fourth ventricle in the lower portion, producing mild internal hydrocephalus.

Microscopic examination of the tumor shows it to be rather cellular, the cells being disposed to a considerable extent in radial arrangement around the blood vessels, together with heavy processes going down to attach to the adventitia of the blood vessels. In other places the processes of the cells are gathered together in heavy sheaves and intertwining masses. The individual cells are mostly bipolar with a somewhat oval nucleus, deeply-stained without much apparent vegetative activity. There is an occasional small area of calcification, but no extensive necrosis. The diagnosis was astroblastoma of the medulla.

In the discussion it was pointed out that astrocytoma presents less definite architecture than the astroblastoma whose heavy sucker-feet radiating around blood vessels are characteristic, and that spongioblastoma polari must also be differentiated.

**Drs. O. B. Hunter and Benjamin Golden** presented 50 microscopic sections (no. 17100) of a white woman, aged 43 years, who came into the hospital in September, 1938, complaining of a rapidly enlarging abdomen, a gain of 100 pounds in the past year, and of recent incontinence of urine. Her menstrual periods began at the age of 14 and have occurred every 30 days with a duration of 4 days. The last period was characterized by long continued bleeding with clot formation. Physical examination showed an enlarged mass in the lower portion of the abdomen. A bilateral salpingo-oöphorectomy and a subtotal hysterectomy were performed.

Gross examination of the specimen showed enlarged ovaries about 20 by 12 by 10 cm. The endometrium also showed a diffuse thickening to about 2 or 3 cm.

Microscopic examination revealed mucous glandular formation which appeared similar both in the ovaries and in the uterus. The glands were characterized by a single layer of columnar cells with nuclei at the bases. The intervening stroma was delicate.

The origin from ovary or from the uterus and the possibility of two separate tumors was discussed. An ovarian origin might have resulted in endometrial hyperplasia which was definitely not the picture in this specimen.

**Dr. Benjamin Golden** presented the body of a male fetus of approximately 9 months of age. There was gastroschisis with ectopia of the abdominal viscera. There had been a normal prenatal period and delivery. The fetal heart was not heard during any stage of labor.

**Dr. Lester Neuman** presented an X-ray film and a microscopic slide in the case of an 18-year-old white man who had a painful lesion of the left middle metacarpal bone with a duration of about 8 months. Proliferative periosteal changes were seen roentgenologically. Microscopically the neoplasm was not found.

In the discussion it was generally thought that the lesion was inflammatory.

**Captain R. M. Thompson** presented a microscopic section of skin from the case of a white adult woman who noticed a warty growth on her heel of 3 months' duration. One elliptical piece of skin, 15 by 10 by 6 mm., containing a central white spicule-shaped nodule 5 mm. in diameter was received. Microscopically, the specimen is a mass of epithelium whose underlying dermis is only a thin strip of hyalinized connective tissue. The squamous epithelium is normally hypertrophied with a very thick keratin layer, but the main lesion is a papillary hyperplasia of the epidermis showing considerable dyskeratosis, including the presence of molluscum bodies. The shape of the lesion is not just that of the molluscum contagiosum. It has apparently been modified by the callus formation. This was considered a non-malignant lesion.

In the discussion the importance of differentiating between molluscum contagiosum and Darier's disease on the one hand, and the less benign Bowen's and Paget's diseases on the other, were emphasized. This case was thought to be molluscum contagiosum.

**Dr. Vincent J. Dardinski** presented three cases. The first was that of a 30-year-old colored man who for 6 months had a tumor of the tongue. The microscopic sections showed a tumor with large xanthoma-like cells containing many eosinophilic granules and rods in their abundant cytoplasm. Some of the cells showed striations.

The discussion concerned the classification of rhabdomyoma, myoblastoma and xanthomatous degeneration of muscles.

The second case was that of an ulcer of the labia majora in a white woman who had had the lesion for 3 months. At first the dark-field examination and Wassermann reactions were negative, but at the end of the second month the blood Wassermann reaction became positive.

In the discussion the members generally thought the diagnosis was that of squamous cell carcinoma, grade I, although two members counselled that one should be on the alert for benign hyperplastic epithelial changes in syphilis of the skin.

The third case was that of an adult male who 8 years before death had had an injury to the back and 1 year before had had a laminectomy for a spinal cord tumor which could not be found at operation. Three months before a pelvic mass resembling an abscess had appeared. At autopsy a tumor mass was found in the testicle and others in the abdomen. Microscopic section showed large cells in a lymphoid stroma. The diagnosis was embryonic carcinoma (seminoma), with which the members agreed.

**Captain Elbert DeCoursey** presented the mounted specimen of a brain and a microscopic section from a brain tumor which had been found at autopsy in a young white adult who had died after 2 weeks of an acute illness diagnosed as meningococcal meningitis. Meningococci had been reported from smears of the spinal fluid. At autopsy only hydrocephalus and a tumor resembling fish roe were found, evidence of meningitis being absent. The tumor microscopically showed the papillae covered by a single layer of cuboidal cells, all resembling choroid plexus. The diagnosis was benign papilloma of the choroid plexus.

In the discussion it was pointed out that there were two

types of ependymomas, the papillary benign type arising from the ependymal cells covering the choroid plexus and the solid ependymas invading brain tumor.

The meeting adjourned at 3:30 p.m.

## CALENDAR FOR COMING MEETINGS

**Wednesday, March 1:** Business meeting.

**Wednesday, March 8:** The Section on Ophthalmology and Otolaryngology will hold a joint meeting with the Society, at which George Morrison Coates, M.D., Professor of Otolaryngology, University of Pennsylvania School of Medicine, and Professor of Oto-Rhinology, Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania, Philadelphia, will present "A Discussion of the Nasal Accessory Sinus Infections." Questions from the floor will be called for.

**Wednesday, March 15:** Clinical pathological presentation of case records from Garfield and Children's Hospitals. Dr. Henry C. Macatee and Dr. Joseph S. Wall, Chairmen of the Medical Staffs, will preside.

Three case records will be presented by the staff of Garfield Hospital as follows: "Erythroblastic Anemia," "Terminal Sepsis Simulating Splenic Anemia," and "A Case of Eberthella Edematiens Infection." Members from the attending staff to take part in the discussion are Drs. Benjamin F. Weems, R. Lomax Wells, and Janvier W. Lindsay, and from the resident staff, Drs. H. Franklin Kreuzburg, Garner Meads, and Samuel Moore.

Two specific case records to be presented by the staff of Children's Hospital are "Acute Myelogenous Leukemia," with discussion by the following staff members: Drs. Joseph S. Wall, Joseph F. Raffetto, Ralph R. Rathbone, E. Clarence Rice, Jr., and Paul J. O'Donnell, and "Neuroblastoma of the Kidney," with discussion by Drs. S. W. Giddens, Harry H. Donnally, E. Clarence Rice, Jr., Ralph R. Rathbone, and W. Dabney Jarman.

**Wednesday, March 22:** This meeting will be under the auspices of the Washington Heart Association. Charles Sidney Burwell, M.D., Professor of Experimental Medicine and Dean of the Medical School, Harvard University will speak on "Heart Disease in Pregnancy."

**Wednesday, March 29:** Program under the auspices of the Academy of Medicine with Arthur E. Hertzler, M.D., Halstead, Kansas, as the invited speaker. His subject will be "Surgery of Cardio-Toxic Goiter." Dr. Hertzler, the "Horse and Buggy Doctor," has wide acclaim both by the medical profession and the general public.

## NEWS AND PERSONALS

A Symposium on the Public Health Significance of the Virus and Rickettsial Diseases is being offered by the Faculty of the Harvard School of Public Health in a short course of lectures, clinics, and demonstrations with special emphasis on public health, to be held at the School during the week of June 12-17, 1939. The fee for the course will be \$25.00, payable at any time up to June 12. En-

rollment, however, should be arranged before June 1, as facilities for many of the clinics and demonstrations are limited. The lectures will be published later in a single volume, which will be sent to each person who has registered for the course. Further information may be had by writing to the Secretary of the Harvard School of Public Health, 55 Shattuck Street, Boston, Mass.

Sulfanilamide, cinchophen, neo-cinchophen and amidopyrine have been added to the list of drugs which can only be dispensed by druggists upon prescriptions which cannot be refilled. The District of Columbia Pharmaceutical Association has been informed that it is unlawful to dispense or sell these drugs except upon prescriptions by the Food and Drug Administration under authority given by the Federal Food, Drug and Cosmetic Act, Section 502 (j).

The Medical Society of Saint Elizabeths Hospital will hold its Second Annual Meeting in Washington, D. C., on April 14, 1939. Dr. Winfred Overholser, Superintendent, will be host to members of the Society at a luncheon. At the afternoon meeting papers will be presented describing research interests of members. A dinner will be held in the evening at a local hotel. C. Macfie Campbell, M.D., Director of the Boston Psychopathic Hospital and Professor of Psychiatry at the Harvard Medical School, and Riley H. Guthrie, M.D., newly appointed First Assistant Physician at Saint Elizabeths Hospital, will be guests of the Society. Further details may be secured from the Chairman of Arrangements, Dr. S. Katzenelbogen, Saint Elizabeths Hospital, Washington, D. C.

The Samuel D. Gross Prize of \$1500 is being offered by the Philadelphia Academy of Surgery in accord with the provision that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens." The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 South 22nd Street, Philadelphia" on or before January 1, 1940. Each essay must be typewritten,



distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer.

**Mr. J. G. Crownhart, Secretary of the State Medical Society of Wisconsin**, who recently returned from Europe, where he made a first-hand study of health insurance in England, Germany, France, Sweden and other countries, has written a book on his observations entitled "Sickness Insurance in Europe." Mr. Crownhart, a former journalist, has been associated with the State Medical Society of Wisconsin for many years. His book is a valuable contribution to the knowledge of a very important subject and one which every physician should read.

**The Fourth Annual Postgraduate Institute of the Philadelphia County Medical Society** will be held at the Bellevue-Stratford Hotel in Philadelphia March 13-17, 1939. "Blood Dyscrasias and Metabolic Disorders" has been selected as the subject for the Institute. The registration fee is \$5.00.

**Dr. Henry LeRoy Bockus** of the University of Pennsylvania, Philadelphia, who spoke at the Medical Society meeting February 8, was guest of honor at a dinner given at the Cosmos Club by the Section on Gastroenterology before the meeting.

**Dr. Frederick O. Coe** was elected resident vice-president to represent The Medical Society of the District of Columbia at the annual meeting of the Washington Academy of Sciences, January 19, 1939.

**The Section on Ophthalmology and Otolaryngology** held a meeting January 20. Papers presented were: "Problems in Thoracic Surgery as Related to Endoscopy," Edgar W. Davis, M.D., and "Experiences in Electrocoagulation," P. S. Constantinople, M.D.

**The Section on Neurology and Psychiatry**, at its meeting February 2, presented the following program: "Amputation of Right Pre-Frontal Area and Repair of Cranium for Traumatic Epilepsy—Case Report," O. Hugh Fulcher, M.D.; "Preliminary Report upon the Operative Treatment of Microcephaly," Daniel D. V. Stuart, M.D., and Herbert H. Schoenfeld, M.D. The Section on Pediatrics was also invited to this meeting.

**The Woman's Auxiliary to The Medical Society of the District of Columbia** held its regular monthly meeting in the Society's building February 1. Mr. Howard Wentworth, Traffic Expert of the Washington Post, addressed the meeting on "Traffic Safety and the Necessity of Coöperation."

**A Grievance Committee** has been appointed by the President, Dr. William J. Mallory, in accordance with the provisions of the new Constitution and By-laws. The personnel of the Committee is as follows:

Dr. Loren B. T. Johnson, Chairman, Drs. William Cabell Moore, A. Clagett Gray, R. Massie Page, and James A. Cahill, Jr.

**The Third Congress of the Pan-Pacific Surgical Association** will be held in Honolulu, Hawaii, September 15-28, 1939. An invitation is extended to all surgeons of The Medical Society of the District of Columbia to meet outstanding men from countries of the Pacific area, including Australia, New Zealand, China, Japan, Java, Canada, and the United States for an interchange of surgical thought and for the purpose of bringing about better understanding through personal contact with the surgeons of these countries. Further information may be obtained by writing to Dr. George W. Swift, 902 Boren Ave., Seattle, past President of the Association; Dr. Frederick L. Reichert, Stanford University Hospital, San Francisco, program chairman for the United States; Dr. Howard Updegraff, 6777 Hollywood Blvd., Los Angeles, program vice-chairman; or Dr. Forrest J. Pinkerton, Secretary-Treasurer of the Association, Young Building, Honolulu.

**The Cancer Commission of the California Medical Association** has recently published a series of studies, reports, conclusions and recommendations submitted by the Commission during the five years from 1931 to 1936. Acknowledgment is made to the California Medical Association for sending several copies to the Medical Society for the perusal of its Cancer Committee. A review copy is also available in the Society's library.

**Georgetown University's Public Health Forum** will conclude its second year with the program scheduled below. The Forum meetings are being held at Gaston Hall, Georgetown University, a



8:30 p.m. each Thursday evening. The radio programs are broadcast over the Mutual Network (WOL) at 10 p.m. following the Forums. The March program follows:

*Forums*

- March 2: "Making Better Teeth." J. P. Burke, M.D.  
March 9: "Diet, Fads and Facts." Miss Catherine Leamey.

*Radio*

- March 2: Diet  
March 9: Chronic Diseases

**The Tenth International Congress of Military Medicine and Pharmacy** will be held in Washington, May 7-15, 1939, with headquarters at the Willard Hotel. The President of the Congress is Major General Charles R. Reynolds, Surgeon General of the U. S. Army.

The first such Congress was held in July, 1921 in Brussels, the second in Rome in 1923, the third in Paris in 1925, the fourth in Warsaw, the fifth in London in 1929, the sixth at The Hague in 1931, the seventh in Madrid in 1933, the eighth in Brussels in 1935, and the ninth in Bucharest in 1937. At the last meeting the Congress accepted the invitation of the United States to hold its tenth meeting in Washington, the first time in the Western World.

Interesting scientific and technical exhibits, including those from the Army, Navy, Public Health Service, and the Veterans' Administration, will be displayed during the entire Congress.

Further information concerning the Congress may be secured by communicating with Colonel Harold W. Jones, Secretary General, Army Medical Library, Washington, D. C.

**The Department of Ophthalmology of the George Washington University School of Medicine** will present a series of lectures and demonstrations by 34 leading ophthalmologists April 4-15, 1939. A five-day practical course in surgery, pathology, and orthoptics, limited to 25 participants, will be given April 4-8, preceding the University's third annual six-day intensive postgraduate course in ophthalmology, April 10-15. Thirty-four lecturers from important medical centers throughout the United States and Canada, including 17 guest lecturers and 17 resident members of the staff of the department of ophthalmology of the George Washington University School of Medicine, will compose the staff of instruction.

**The Annual Scientific Assembly** which is to be held April 25-27, 1939 is evoking considerable interest, as manifested by inquiries from all the nearby states.

The Program Committee has arranged a three-day post-graduate course in gastroenterology. Among the 52 speakers obtained to date of going to press are the following:

Eloise B. Cram, M.D., National Institute of Health; Porter Paisley Vinson, M.D., formerly of the Mayo Clinic and now Professor of Bronchoscopy, Esophagoscopy and Gastroscopy, Medical College of Virginia; B. B. Vincent Lyon, M.D., Associate Professor of Medicine, Jefferson Medical College; Ernest Howard Gaither, M.D., of the American Gastroenterological Association of Baltimore, Maryland; Robert James Coffey, M.D., formerly of the Mayo Clinic; Fred W. Rankin, M.D., of Lexington, Kentucky and formerly of the Mayo Clinic; Lewellys F. Barker, M.D., Professor Emeritus of Medicine, Johns Hopkins University School of Medicine; Lewis Marshall Hurxthal, M.D., Lahey Clinic, Boston, Massachusetts.

With the assistance of the Woman's Auxiliary 3,000 announcements were addressed to physicians in this area, many of whom have written for further information.

Aside from the scientific sessions, educational and entertainment features have been announced:

For Tuesday night, April 25, a Stag Party is planned; for Wednesday a Public Meeting and Thursday night the Annual Banquet of the Society, with probably Broadway entertainment.

On the first day there will be a general luncheon open to all registrants. The Women's Medical Society is expecting to entertain visiting women physicians at a luncheon and will be on hand to greet them on arrival. The Woman's Auxiliary is preparing to meet and entertain the wives of visiting physicians and to show them the sights of the city.

All sessions will be held in the Mayflower Hotel. More than two thirds of the commercial exhibit space is already taken. Scientific exhibits are now being arranged for.

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**Daniel Percy Hickling, M.D., M.A.,  
D.Sc.**

(1863-1939)

Dr. Daniel Percy Hickling, a Life Member of The Medical Society of the District of Columbia, died January 10, 1939, at the Georgetown University Hospital.

Dr. Hickling was a nationally known neuropsychiatrist. He served as alienist for the District from 1914 to 1933, when he was retired. Upon leaving office, he recommended to the Commissioners the establishment of a lunacy commission to handle the work he had been doing. He felt that such a commission should have jurisdiction under the law not only for the admission of patients to Saint Elizabeths Hospital but for the discharge of District cases which had been previously committed.

He was consulting alienist at Saint Elizabeths, Psychiatrist-in-Chief at Gallinger Municipal Hospital, and also had charge of the Department of Neurology at Georgetown University School of Medicine during the years following his retirement from public office. Since 1919 he has been attending neuropsychiatrist at the U. S. Veterans' Bureau. He has also been a consulting neuropsychiatrist at Providence Hospital.

Dr. Hickling was born in Washington, D. C., in 1863. He was a graduate of Columbian College, now George Washington University, and received his degree in medicine from Georgetown University in 1884 and a master of arts degree in 1925. In 1937 Georgetown University conferred upon him the degree of doctor of science. He pursued the graduate study of neurology at Fordham following study in Paris, London, Chicago and Boston.

He was resident physician at Providence Hospital for a year and in 1897 took charge of the Washington Asylum Hospital as a visiting physician, in which capacity he remained until 1914.

In addition to his affiliation with the Georgetown University School of Medicine, Dr. Hickling was a professor of medical jurisprudence at National University. He was a member of the Committee on Organization for the First International Congress on Mental Hygiene and chairman of the Executive Committee of the Society of Mental Hygiene of the District of Columbia. He held membership in the American Psychiatric Society, the national and local Psychopathic Psychological Societies, the Academy of Sciences, and the Anthropological Society of the District. At one time he was chairman of the Public Health Committee of the Board of Trade. In Freemasonry he held the 32nd degree and was a Knight Templar and a Shriner.

Dr. Hickling became a member of the Medical Association of the District of Columbia in 1884 and was elected to membership in the present Society in 1886. He was a Fellow of the American

Medical Association. He became a Life Member of the Society January 1, 1929, at which time he was nominated by the Society for Affiliate Fellowship in the American Medical Association. He served the Society in many posts during his Active Membership. He was a member of the Legal Advisory Committee in 1925 and 1926; he served as chairman of the Section on Nervous and Mental Diseases from 1931 to 1934 and was ex officio member of the Executive Committee during these same years, and he was a member of various subcommittees dealing with legislation and public health.

He is survived by his widow, Mrs. Harriet Stone Hickling, daughter of former Governor Stone of Pennsylvania; a daughter, Mrs. Sarah Showell, and a son, Daniel Percy, Jr. His home was at 6211 Thirty-third Street, N.W.

### **Charles Lincoln Bliss, M.D., M.A.**

(1865-1939)

Charles Lincoln Bliss, an Active Member of The Medical Society of the District of Columbia, died January 21, 1939, at his home, 4930 Tilden Street, N.W., following a brief illness.

Dr. Bliss was born in Constantinople, Turkey, March 14, 1865, where his parents were missionaries. His father, Isaac Bliss, helped translate the Bible into several languages while there.

He received his medical degree from New York University Medical College in 1891 and a master of arts degree from Amherst in 1895. After serving an internship at Bellevue Hospital in New York, he went to Beirut, Syria, where he taught in the medical department of the Syrian Protestant College from 1892 to 1895. He began practicing medicine in the District in 1895.

He was a member of the National Homeopathic Society and a member of Alpha Delta Phi fraternity. He was elected to membership in the local Society in 1934.

Surviving are his widow, Mrs. Edith L. Bliss; two sons, George L. Bliss, Dover, Ohio, and Charles M. Bliss, New York; two daughters, Mrs. Robert Lord, Los Angeles, and Mrs. Fred Harriman of this city; a brother, William G. Bliss of Florida, and six grandchildren.

### **Mary O'Malley, M.D.**

(1867-1939)

Dr. Mary O'Malley, a former member of The Medical Society of the District of Columbia, died



January 30, 1939, in Buffalo, New York, where she had lived since retiring from her position as clinical director of Saint Elizabeths Hospital in 1935.

Dr. O'Malley was born in Media, New York, February 8, 1867. She was graduated from the University of Buffalo Medical School in 1897 and served her internship at Sisters of Charity Hospital, Buffalo. For several years she was a member of the staff of the Binghamton State Hospital for the Insane. There, in 1903, she met the late Dr. William A. White, former head of Saint Elizabeths, who persuaded her to come to Washington in 1905.

While in Washington, Dr. O'Malley was a member of the consulting staff of George Washington University and the consulting staff of Gallinger Hospital. She was president of the American Medical Women's Association in 1933-34. In 1931 she was delegate from the latter to the Medical Women's Congress in Vienna. She was a Fellow of the American College of Physicians, of which she was a past vice president. She held membership in the American Medical Association, the American Psychiatric Association, and the Washington Psycho-Pathological Society. She was elected to membership in the local Medical Society in 1908 and retained her membership for 28 years. She was also past president of the District of Columbia Women's Medical Society.

Surviving her are a brother, John O'Malley, and two sisters, the Misses Ann and Margaret O'Malley, all of Buffalo. Two other brothers who died in recent years were judges in New York State.

### **José Guillermo Lewis, B.S., M.D.**

(1898-1939)

Dr. José Guillermo Lewis, chief of staff of Casualty Hospital and a former member of The Medical Society of the District of Columbia, died in Colon, Panama, February 12, 1939. On leave from Casualty since June, 1937, he was serving as the chief surgeon of the new Amador Guerrero Hospital in Colon.

Dr. Lewis was born in Panama City December 16, 1898. He received both his academic degree and his degree in medicine from Georgetown University, the latter in 1923. Returning to Panama, Dr. Lewis became assistant surgeon of Santo Tomas Hospital under Dr. Augusto S. Boys, the present Minister from Panama to the United States. He returned to the United States in 1931 and took postgraduate work at the Mayo Clinic in Rochester,

Minnesota, and then went to Casualty Hospital as assistant to the late Dr. Joseph D. Rogers. Upon Dr. Rogers' death in 1933 Dr. Lewis succeeded him as chief of staff of Casualty Hospital.

Dr. Lewis was a Fellow of the American College of Surgeons and also of the American Medical Association. He held membership in the Isthmian Canal Zone Medical Society and the Asociacion Medica Nacional de Panama. He was a trustee and at one time vice president of the Pan American Medical Association. He had been decorated by foreign countries for scientific work.

Dr. Lewis was elected to membership in the local Medical Society in 1932 and retained his membership until 1938.

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of epinephrin hydrochloride every day for periods of 3 months to 8 years. With from 0.5 c.c. to 2.0 c.c. doses of "slow epinephrin" these same patients remained free from asthmatic symptoms for 8 to 16 hours. Only 1 patient failed to receive prolonged relief from the "slow epinephrin."

Although the observations on patients with acute asthma cannot be so well controlled as those on patients with chronic asthma, a fair evaluation of the comparative effectiveness of epinephrin hydrochloride and "slow epinephrin" can be made. In 30 patients treated during one or more acute paroxysms of asthma, each patient received from 0.5 c.c. to 1.5 c.c. of "slow epinephrin" and remained free from asthma for 9 to 16 hours, but more generally 12 hours. These results are remarkably gratifying when one compares them to previous similar attacks where frequent injections of epinephrin hydrochloride had been necessary and where rest had been interfered with because of recurring paroxysms of asthma.

In a patient with generalized urticaria, injections of epinephrin hydrochloride had afforded only temporary relief, whereas injections of "slow epinephrin" provided relief for 10 to 12 hours or longer. Subsequent observations on patients with urticaria have revealed that those who obtain relief of symptoms from epinephrin hydrochloride receive more prolonged relief from "slow epinephrin."

In a patient with serum disease, numerous drugs were tried to relieve the subjective manifestations of a generalized arthralgia and urticaria. Epinephrin hydrochloride and "slow epinephrin" provided the most marked relief of symptoms. However, relief from the former was apparent for only 1 hour while the latter proved effective for 12 hours.

The hyperglycemic and cardiovascular responses to



"slow epinephrin" were maintained for at least 8 to 9 hours while the hyperglycemic and cardiovascular responses to epinephrin hydrochloride were usually over in 3 hours and 1½ hours, respectively.

Because of the individual variation in tolerance to epinephrin, great care should be exercised in choosing the initial dose of "slow epinephrin." In chronic asthmatics who have been taking frequent injections of epinephrin hydrochloride, it is safe to begin with 1.0 c.c. of the "slow epinephrin." Subsequently the dose may be increased or decreased, depending upon the patient's response. One patient may be made comfortable with 0.75 c.c., while another requires 1.5 c.c. to 2.0 c.c. In acute asthmatic attacks the dose should be regulated according to the severity of the attack. As a general rule, 1.0 c.c. is sufficient in moderately severe asthma. Gratifying results are obtained in acute asthma by administering epinephrin hydrochloride prior to "slow epinephrin" to give immediate relief of symptoms.

"Slow epinephrin" may be given either subcutaneously or intramuscularly. If given subcutaneously, it is best to make the injections in the buttocks. Numerous consecutive administrations may be made intramuscularly without discomfort to the patient.

"Slow epinephrin" will be commercially available within 2 to 6 months.

#### BIBLIOGRAPHY

1. KEENEY, E. L.: Slowly Absorbed Epinephrin Preparation; Preliminary Report. Bull. Johns Hopkins Hosp., 1938, **62**, 227.
2. KEENEY, E. L., PIERCE, J. A., AND GAY, L. N.: Epinephrine in Oil. A New Slowly Absorbed Preparation of Epinephrine. Arch. Int. Med., 1939, **63**, 119.

(Continued from page 52)

#### BIBLIOGRAPHY

1. BLUMGART, H., AND YENS, O. C.: J. Clin. Investigation, 1927, **4**, 1.
2. BLUMGART, H., AND WEISS, S.: Ibid., 1927, **4**, 15.
3. BLUMGART, H., AND WEISS, S.: Ibid., 1927, **4**, 399.
4. BLUMGART, H.: Medicine, 1931, **10**, 1.
5. OPPENHEIMER, B. S., AND HITZIG, W. H.: Am. Heart J., 1936, **12**, 257.
6. HITZIG, W. H.: Proc. Soc. Exper. Biol. and Med., 1934, **31**, 935.
7. MILLER, H. R.: Ibid., 1934, **31**, 942.
8. LEINHOFF, H. D.: J. A. M. A., 1935, **105**, 1759.
9. CANDEL, S.: Ann. Int. Med., 1938, **12**, 236.
10. SOLLMANN, T.: Manual of Pharmacology, 5th ed. Philadelphia, Saunders, 1936, page 731.
11. ROTH, G. B.: Bull. Mt. Desert Is. Biol. Lab., 1937, **23**.
12. NOEL, H. L. C., AND SOUTTAR, H. S.: Lancet, 1912, **2**, 818.
13. ATKEY, O.: Ibid., 1913, **1**, 169.
14. HONAN, W. F., AND HASSLER, J. W.: Med. Rec., 1913, **83**, 231.
15. COLLIER, G. K.: New York State J. Med., 1914, **14**, 130.
16. COLE, G. W., JR.: J. Kansas M. Soc., 1914, **14**, 211.

17. CALDWELL, W. E.: Am. J. Obst. and Gyn., 1922, p. 313; New York State J. Med., 1926, **26**, 57.
18. NITZESCU, I. I.: Compt. rend. Soc. de biol., 1932, Par. 3, 337.
19. BEAUCHEMIN, J. A., SPRINGER, R. G., AND ELLIOTT, G. A.: M. Times & Long Island M. J., 1935, **63**, 179.
20. GOLDBERG, S. J.: Am. J. M. Sc., 1936, **192**, 36.
21. BAER, S., AND SLIPAKOFF, B. G.: Am. Heart J., 1938, **16**, 29.
22. Interns Handbook, 2nd ed.: Philadelphia, Lippincott, 1938, page 390.

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fluent. The amount of enlargement is not related to the amount of pneumonic consolidation. Follicles are atrophic, pulp congested and focally infiltrated by lymphoid cells. Erythrophagia and pulp thrombosis were inconstant findings.

The red bone marrow showed little important or constant alteration. The lymph nodes in chest and abdomen were a little enlarged, soft and edematous. Congestion, edema, sinus catarrh, erythrophagia and hemorrhage were present in variable measure.

The adrenals showed some lipoid decrease, and, microscopically, fairly frequent, focal medullary lymphocytic infiltration. Vascular endothelial swelling, necrosis, thrombosis, and hemorrhages were inconstant and not especially frequent.

The kidneys generally showed cortical cloudy swelling. A petechial eruption was present in the pelvic mucosae in 1 case. Focal interstitial hemorrhage, perivascular and interstitial infiltration by lymphocytes, fewer plasma cells, monocytes, and occasional neutrophils, and vascular endothelial swelling, necrosis and capillary thrombosis were frequent.

Adult testes generally showed only softening and atrophy with aspermatogenesis and desquamative degeneration. Juvenile testes showed vascular endothelial lesions, hemorrhages, either gross or microscopic, and inconstant perivascular infiltration, the last more frequent in epididymis than testis.

The prostate showed no significant changes.

The ovaries and vagina showed no lesions, the uterus and tubes inconstant focal vascular lesions.

The bladder was usually normal, infrequently the mucosa was congested, in 1 case a profuse petechial eruption was seen.

About half the cases presented mucosal hemorrhages or petechiae of variably extensive distribution in stomach and intestines.

The brain showed meningeal injection, less often focal hemorrhages. Microscopically, in the second week or later vascular endothelial lesions, perivascular lymphocytic infiltration, glia cell nodes, and arteriolar thrombocrosis with microscopic infarcts were frequent findings. The meninges and the chorioid plexus were often infiltrated.

# CONSTITUTION AND BY-LAWS

*of*

THE MEDICAL SOCIETY

*of the*

DISTRICT OF COLUMBIA

*Adopted January 9, 1939*



WASHINGTON, D. C.

1939

SUPPLEMENT TO THE MEDICAL ANNALS OF THE DISTRICT OF COLUMBIA  
February, 1939

*Remove and keep on file*

# CONSTITUTION AND BY-LAWS

## OF

### THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

#### CHAPTER I.—NAME, OBJECT AND STATUS

ARTICLE I. The name of this organization shall be THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

ARTICLE II. The object of this Society shall be the promotion of the science and art of medicine and sanitation and the common interests of its members and the public.

ARTICLE III, SECTION I. This Society, chartered by Act of Congress of May 24, 1924, shall be a continuation and amalgamation of the Medical Society of the District of Columbia (founded September 26, 1817, and chartered by acts of Congress of February 16, 1819, and July 7, 1838) and the Medical Association of the District of Columbia (organized January 11, 1833).

SEC. 2. This Society shall be a medical organization of the District of Columbia, constituted and maintained in conformity with the general plan of the American Medical Association; it hereby declares its allegiance to the American Medical Association and agrees with other state and territorial medical associations to the formation and the perpetuation of the House of Delegates of the American Medical Association.

#### CHAPTER II.—MEMBERSHIP

ARTICLE I. The members of this Society shall be of four classes; active, life, associate and honorary.

ARTICLE II. Every active, life, associate and honorary member of either the Medical Society of the District of Columbia or the Medical Association of the District of Columbia, or of both, in good standing at the time this Constitution and By-laws go into effect, shall ipso facto become a member (active, life, associate, or honorary, as the case may be) of this Society; and the order of seniority of such members shall be reckoned from the date of their first admission into either of those bodies. Seniority since the amalgamation shall be dated from the date of last admission.

ARTICLE III, SECTION I. Active membership shall be limited to citizens of the United States who are reputable, legally qualified practitioners of medicine, who are solely or mainly engaged in the

lawful practice of medicine in the District of Columbia, and who are not active members of any other component association of the American Medical Association.

SEC. 2. Applications for active membership must be made in writing on forms provided by the Society, indorsed by three active members of the Society and sent to the Secretary, who shall present their names at a subsequent business meeting of the Society and send a list of their names to the members of the Society. They shall then be referred to the Board of Censors, which shall investigate and, after a lapse of two months, submit a report thereon to the Society to be voted upon at the next regular meeting of the Society. After election each applicant shall, within three months, sign an obligation to be governed by the Constitution and By-laws of this Society and pay the dues for the current calendar year.

SEC. 3. Active members who are non-residents of and have ceased to practice medicine in the District of Columbia may, upon written request, become associate members by a majority vote of the Executive Board.

ARTICLE IV. Life members shall be active members who have been active members for a total of forty years. They shall have all of the privileges of active membership and shall be exempt from paying dues and assessments.

ARTICLE V. Associate members shall be doctors of medicine not eligible for active membership or scientists engaged in collateral lines of activity or research. They shall be elected in the same manner as active members; they shall have the privilege of attending and participating in the scientific sessions of the Society, and shall receive its publications and notices of its scientific meetings; they shall not vote or hold office in the Society, shall be subject to its discipline, and pay such dues and assessments as may be imposed by the Society. Associate members, upon becoming eligible for active membership, shall make formal application for active membership. On failure to do so within three months, they shall cease to be associate members.

ARTICLE VI. Honorary members. Any physi-



cian, scientist, or other person who deserves recognition, by reason of eminent contributions to medical or collateral science or of meritorious services to the medical profession, may be proposed for honorary membership by the Executive Board in writing at any business meeting. The proposal shall be considered by the Board of Censors and reported on at the next business meeting, and shall then be voted on by the Society in the same manner as applications for active membership. Favorable concurrence of two-thirds of the votes cast shall effect admission of the candidate as an honorary member. Honorary members shall have the privilege of attending the meetings and participating in the scientific proceedings of the Society, but shall not hold office nor vote, nor pay dues or assessments; notices of meetings need not be sent to them unless they are resident in the District of Columbia or so desire.

### CHAPTER III.—MEETINGS

ARTICLE I, SECTION I. This Society shall hold regular meetings every Wednesday at eight o'clock p. m. during the months from October to May, inclusive, excepting the last two Wednesdays in December and May, and Wednesdays falling upon a National Holiday or the day before.

SEC. 2. The first meeting in May of each year shall be the annual business meeting of the Society and shall be devoted to the reception of annual reports and other annual business, including election of officers as hereinafter provided.

SEC. 2A. The annual scientific session shall be held on the Tuesday and Wednesday following the annual business meeting, unless otherwise determined by vote of the Society.

SEC. 3. The first meeting of each month shall be a business meeting. Other meetings shall be scientific meetings.

SEC. 4. Special meetings shall be held as may be ordered by the Society or the Executive Board or upon the written request of any thirty-five members.

ARTICLE II. Due notice of each regular and special meeting shall be sent to each active and life member, in which shall be specified, so far as possible, the program contemplated for the meeting, both as to scientific material and items of important business.

ARTICLE III. This Society shall be governed and conducted exclusively by its active and life members.

ARTICLE IV. Fifty active and life members

present shall constitute a quorum for the valid transaction of the business of the Society.

### CHAPTER IV.—DUES AND ASSESSMENTS

ARTICLE I. Dues shall be for the calendar year and shall be paid to the Treasurer before April 1st of each year.

ARTICLE II. Active members shall pay twenty dollars, except that members who have been graduated in medicine less than three years shall pay for their first year ten dollars, for their second year fifteen dollars, and thereafter twenty dollars.

ARTICLE III. Associate members shall pay five dollars.

ARTICLE IV. Special assessments may be proposed only by the Executive Board at any meeting; notice of the proposed assessment shall then be sent to every member stating the regular or special meeting at which action will be taken.

ARTICLE V. Members who have not paid their dues and assessments before the first day of April of each year, after due notice of their delinquency, shall be placed on the list of members in arrears for dues and assessments. If dues and assessments are not paid by December 31st of each year, such delinquents shall be automatically dropped from membership in the Society. Members so dropped may be reinstated by the Executive Board upon payment of arrears in dues and assessments for the balance of the year when dropped but they shall not retain their seniority unless all dues are paid.

ARTICLE VI. Dues and assessments may be temporarily or permanently remitted by the Executive Board.

### CHAPTER V.—OFFICERS AND THEIR DUTIES

ARTICLE I, SECTION I. The officers of this Society shall be a President, a President-elect who shall assume the office of President the year following his election, a First and a Second Vice President, a Secretary, a Treasurer, a Delegate or Delegates, an Alternate or Alternates to the House of Delegates of the American Medical Association. The office of Secretary and Treasurer may be, by action of the Society, vested in the same person.

SEC. 2. The President shall preside over the meetings of the Society; call special meetings as provided in Chapter III, Article I, Sec. 4; and shall perform such duties as may be imposed on him by

the Society, and in general as pertain to his office. He shall be a member ex officio of the Executive Board and shall appoint all members of the various committees.

SEC. 3. The President-elect shall be a member ex officio of the Executive Board.

SEC. 4. The Vice Presidents shall, in order of their rank, assume the duties of the President during his absence or inability to act.

SEC. 5. The Secretary shall make and keep full records of the proceedings of the Society; shall carry on and fulfil the duties customary and usual to the position, performing such duties as are assigned to him either by the Society or by the Executive Board, of which he shall be the Secretary ex officio. The Secretary shall also serve as Secretary of any and all committees. At each annual business meeting, the Secretary shall make a complete report of his activities during the preceding year.

SEC. 6. The Treasurer shall give bond in such amount as may be ordered by the Executive Board. He shall demand and receive all funds due the Society together with bequests and donations. He shall sign all checks but they shall be, in turn, countersigned by the chairman of the Executive Board. He shall subject his accounts to such examination as the Executive Board may order, and shall annually render an account of his affairs to the Society.

SEC. 7. The Delegate or Delegates to the House of Delegates of the American Medical Association, or, if he be unable to serve, the Alternate or Alternates, shall attend the sessions of the House of Delegates of the American Medical Association as the accredited representative of this Society; and shall make report thereon at a subsequent business meeting of the Society. The Senior Delegate to the House of Delegates of the American Medical Association shall be a member of the Executive Board ex officio, with powers and duties incident thereof. Seniority of Delegates shall be determined by date of election or by the largest number of votes received if elected simultaneously.

#### CHAPTER VI.—ELECTION AND TERMS OF OFFICERS

ARTICLE I. Elections shall be by ballot, and a majority of the votes cast shall be necessary to elect. In case no nominee receives a majority of the votes on the first ballot, the nominee receiving the lowest number of votes shall be dropped and a new

ballot taken. This procedure shall be continued until one of the nominees receives a majority of the votes cast, when he shall be declared elected.

ARTICLE II. Nominations for office shall be made orally at the first meeting in March. The election of officers shall be held at the annual business meeting.

ARTICLE III. The official year shall be from the first day of July to the following thirtieth day of June.

ARTICLE IV, SECTION I. The officers, except the Secretary, (and the Treasurer if it be the same person) the Delegate or Delegates and the Alternate or Alternates, shall be elected yearly at the annual business meeting and shall assume office and serve during the following official year or until their successors assume office. The Secretary, who need not be a physician or a member of the Society, shall be selected by the Executive Board.

SEC. 2. The President and Vice Presidents shall be ineligible for re-election for the same office until after two years from the expiration of their terms of office.

ARTICLE V. The Delegate or Delegates and the Alternate or Alternates (who must have been members of the American Medical Association for at least two years) shall be elected biennially at the annual business meeting of odd number years to serve for the following two official years.

ARTICLE VI. One elective member of the Executive Board shall be elected yearly at the annual business meeting to serve for the following four official years. Elective members of the Executive Board shall be ineligible for re-election as elective members for one year after the expiration of the four year term.

ARTICLE VII. Whenever a vacancy occurs in any office (not automatically filled) an election for the remainder of the term of office shall be held by the Society at the earliest convenient date.

#### CHAPTER VII.—DUTIES OF THE EXECUTIVE BOARD

ARTICLE I. The Executive Board shall consist of the President, the President-elect, Senior Delegate to the American Medical Association (all ex officio) and four elective members, one of whom shall be elected at the annual business meeting of the Society in May, each year, to hold office for a term of four years. In the event of a vacancy among the

said four elective members, said vacancy shall be filled for the balance of the term through an election by the Society. The Secretary of the Society shall be ex officio Secretary to the Executive Board without vote. Four members of the Executive Board shall constitute a quorum for the transaction of business.

ARTICLE II. The senior elective member of the Executive Board shall serve as chairman; his immediate junior as vice chairman; and the Secretary of the Society as Secretary without vote; except that in the event of a vacancy, the member elected to complete an unexpired term shall be considered junior to the other members. Seniority of elected members of the Executive Board shall be determined by date of election or by the largest number of votes received if elected simultaneously.

ARTICLE III, SECTION I. The Executive Board shall carry on the ordinary business of the Society with all of the powers of the Society itself, subject to the Constitution and By-laws and to the action of the Society at any regular or special meeting.

SEC. 2. Wherever a matter of general policy is involved, whether originating in the Executive Board or referred to it by the Society, the question shall be submitted to the Society as a whole for action with the recommendation of the Executive Board, and the membership shall be notified of said question in the usual manner.

SEC. 3. All committee appointments by the President shall be subject to confirmation by the Executive Board.

SEC. 4. The Board shall have charge of the "Medical Annals of the District of Columbia" (i. e., the official publication of the Society) and shall appoint the editor, associate editors, and managing editor of said publication, from time to time, for such term as the Board deems best.

SEC. 5. At each business meeting, the Chairman of the Board shall inform the Society of the matters considered by the Board and the disposition thereof during the period prior to said meeting and subsequent to the last report, so that the Society shall be kept fully informed at all times of the activities of the Executive Board.

SEC. 6. The Chairman of the Board shall make an annual report in writing of the activities of the Board for the preceding year and shall submit for the approval of the Society the budget for the ensuing year, which said report and budget shall be

filed and shall become part of the records of the Society.

#### CHAPTER VII(A).—THE BOARD OF CENSORS

ARTICLE I. There shall be elected at the annual meeting of the Society a Board of three Censors, one of whom shall be elected for a term of three years, one for two years, and one for one year. At each annual meeting thereafter there shall be elected one censor for a term of three years. Applications for membership shall be promptly delivered to the Board of Censors, who shall inquire into the standing of the applicant. The Board of Censors shall notify the Society of the application and shall allow a period of two months within which members of the Society may register their approval or disapproval with the Board of Censors. After the elapse of the said two months, the Board of Censors shall report in writing, to the Society, recommending the election or rejection of the said applicant.

#### CHAPTER VIII.—COMMITTEES

ARTICLE I. The standing committees of the Society shall include the following:

1. Committee on Programs
2. Committee on Postgraduate Education
3. Committee on Public Health
4. Committee on Public Relations
5. Committee on Public Policy
6. Committee on Industrial Medicine
7. Grievance Committee
8. Committee on Medical Economics
9. House Committee

Additional committees may be created with the approval of the Society.

ARTICLE II. The Committee on Programs shall study the character and scope of scientific proceedings of the Society and shall prepare the scientific programs.

ARTICLE III. The Committee on Postgraduate Education shall study the field of postgraduate education, making available, so far as it lies within its power, program material for such postgraduate education.

ARTICLE IV. The Committee on Public Health shall initiate and carry on such studies and activities in the field of public health as the said committee or the Society may suggest or direct.

ARTICLE V. The Committee on Public Relations



shall disseminate among the public suitable information concerning medical and hygienic matters.

ARTICLE VI. The Committee on Public Policy shall present to those public officers charged with the duty of enacting or enforcing measures in the interest of public health, all available information that may in any way assist such officers honorably to discharge their responsibilities, provided such aid and assistance is in keeping with the policies of this Society.

ARTICLE VII. The Committee on Industrial Medicine shall have supervision of all matters pertaining to industrial medicine, including matters arising out of the operation of Chap. X, Art. I, Sec. 5 and 6.

ARTICLE VIII, SECTION 1. The Grievance Committee shall receive from physicians or from laymen complaints pertaining to the relationship of physicians to each other or to their patients, and shall at any time after hearing and considering available evidence make recommendations to the Executive Board of appropriate action under the circumstances, including punishment by reprimand, fine, suspension, expulsion or the like; but said Executive Board shall not initiate any such proceedings without the written recommendation of the Grievance Committee. The said Board shall, however, expel a member only upon a vote of five-sevenths of its entire membership and shall otherwise penalize a member only upon a vote of five-sevenths of its entire membership. The said Board may, in any instance, of its own volition, refer any question pertaining to this subject or any other, to the Society for its consideration. In all instances a complete stenographic record of complaints, proceedings, and other matter pertinent to the question involved, shall be kept by the Committee, subject to call or examination of the Executive Board and/or of the Society. No member shall be penalized until after being given full and reasonable opportunity for defense, including at least a month's notice of the time and place of hearing of the proposed trial.

SEC. 2. Notice of expulsion or of the imposition of other penalties shall be sent to the said member by registered mail. At least ten days shall then be allowed to elapse from the time of sending the registered letter. At any time within said ten day period, the member so expelled or otherwise penalized shall have the right to appeal his case to the Society by sending to the Secretary of the Society,

in writing, a request for such appeal, setting forth in his request a complete statement of the facts upon which he bases his appeal. The Secretary shall thereupon acknowledge receipt of the appeal and shall call the matter to the attention of the Society at a subsequent meeting. The Society shall review the findings of the Executive Board and shall dispose of the matter either by affirmation, modification or reversal of the action taken by the Executive Board.

ARTICLE IV. The Committee on Medical Economics shall investigate matters relating to social and economic aspects of medicine, and shall make such recommendations as may in its judgment seem proper.

ARTICLE X. The House Committee shall have general supervision of the Society's property; it shall recommend any improvements, extensive repairs or changes in the property. It shall likewise prescribe such rules and regulations as may be indicated for the proper maintenance and management of the Society property.

ARTICLE XI. The various committees shall be under the supervision of and responsible to the Executive Board and shall make a report of their proceedings from time to time at the meetings of the Society. They shall also prepare and submit a report of their activities at the annual business meeting of the Society.

#### CHAPTER IX.—SECTIONS

ARTICLE I. Whenever a sufficient demand therefor arises, active, life and associate members may organize sections, composed of special classes of the membership or devoted to the consideration and promotion of special branches of medical science, and art, by securing the adoption of amendments to this Constitution recognizing and establishing each section by name as a definite department of this Society. Each section shall form and maintain an organization by adopting By-laws, and annually in May electing a chairman, vice chairman, secretary and treasurer, to serve for the ensuing fiscal year. Any active, life or associate member of the Society may, at his option, join any section, but must conform to such financial or other regulations as may be imposed by the section, under penalty in case of not so conforming of forfeiting membership in the section. Each section shall arrange for the time and place of its meetings, but shall not hold sessions at

the same time with the regular meetings of the Society; by arrangement with the Society or the Committee on Programs, however, the scientific proceedings of regular meetings of the Society may, either occasionally or at stated intervals, be conducted by the sections. All members of the Society shall have the right to attend the scientific sessions of any section, but not without permission or invitation to participate in the discussions (except when held at the regular meetings of the Society). The transactions of the sections may be published with the transactions and proceedings of the general Society. Sections may at any time submit to the general Society reports or recommendations for the information or action of the latter. Each section shall be governed and conducted by its own active and life members; but its proceedings and organization must conform to the Constitution and By-laws of the Society, and it shall be subject to the control of, and appeal to, the Society; provided, that it shall require a two-thirds vote of the Society to reverse any action taken by any section. The Society shall not, without its consent, be put to any expense on behalf of any section. Each section shall furnish to the Society a copy of its By-laws and all amendments thereto, and shall submit such information concerning its operations as the Society may at any time require. Each section at the annual meeting shall submit a report of its proceedings during the preceding year, giving the names of its officers, the number of its members, the number of and attendance at its meetings, the work accomplished, and in general such information as may keep the Society advised as to its activity, success and character. The existence of any section may be terminated by the adoption of an amendment to this Constitution annulling its recognition and establishment.

ARTICLE II. The following sections are recognized and established as definite departments of this Society:

Section 1, on Ophthalmology, Otology, Rhinology and Laryngology.

Section 2, on Neurology and Psychiatry.

Section 3, on Pathology and Laboratory Medicine.

Section 4, on Neoplastic Diseases.

Section 5, on Gastroenterology.

Section 6, on Pediatrics.

## CHAPTER X.—PROFESSIONAL OBLIGATIONS

ARTICLE I, SECTION I. The Principles of Medical Ethics of the American Medical Association shall be binding upon the members of the Society.

SEC. 2. Members shall comply when summoned as witnesses in cases under investigation by, and upon notice from, the Executive Board and the various committees of the Society.

SEC. 3. All duties, obligations and regulations as to their professional conduct and relations with this Society and with one another which shall be imposed by the Constitution and By-laws of this Society shall be binding and mandatory upon all members, and for violation thereof they shall be subject to discipline by the Executive Board and subject to a right of appeal to the Society as heretofore provided.

SEC. 4. "It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession." (Chap. III, Art. VI, Sec. 2, Principles of Medical Ethics, American Medical Association.) No member of the Society shall enter into a written, verbal, or implied contract or agreement of employment with any person, firm, corporation, association, club, lodge, or other similar organization, including the Federal and/or District Government, the terms of which contract or agreement are in violation of the principles herein expressed. The customary professional relationship of a physician to his patients, upon the basis of individual fees for services rendered, shall not be regarded as a contract within the meaning of this section.

SEC. 5. Every member of the Society before entering into a contract or agreement for rendering professional services shall submit a copy of his contract, if written, or a true declaration of the terms of the agreement, in writing, to the Committee on Industrial Medicine for approval. In the event that the committee disapproves the contract, a member may appeal to the Executive Board.

SEC. 6. No member of the Society shall engage in any professional capacity whatsoever with any organization, group or individual, by whatever name called or however organized, engaged in the practice



of medicine within the District of Columbia or within 10 miles thereof, which has not been approved by the Society.

The Executive Board is authorized and directed to prepare an approved list of organizations, groups and individuals, by whatever name called and however organized, engaged in the practice of medicine within the District of Columbia or within 10 miles thereof, and the same shall be kept in the office of the Secretary. Before any such organization, group or individual can be placed on the approved list of the Society, such organization, group or individual, or the member of the Society proposing professional relations therewith, shall submit to the Committee on Industrial Medicine such evidence as the committee or the Society may require showing the character, activities, financial condition and ethical standards of said organization, group or individual, and after considering the same, said committee shall make a report of its investigation and findings to the Executive Board for such action as it may deem necessary.

SEC. 7. The following obligation shall be signed by each new member within three months of his election to membership: "I hereby agree to be governed by the Constitution and By-laws of The Medical Society of the District of Columbia, and to abide by the regulations prescribed therein."

#### CHAPTER XI.—AMENDMENTS

ARTICLE I. Amendments to the Constitution and By-laws may be adopted by a favorable concurrence of two-thirds of the votes cast at any business meeting after having been proposed in writing at a previous business meeting and a copy thereof been sent to all active members with a notice of the meeting at which their adoption is to be voted on.

#### CHAPTER XI(A).—IMPEACHMENT OF OFFICERS

ARTICLE I. When, in the opinion of the Society or in the opinion of the Executive Board, as evidenced by a majority vote of either, an officer of the

Society or a member of the Executive Board shall be deemed guilty of misconduct or a gross breach of his obligations to the Society, then charges shall be drawn by the Executive Board, and the matter carefully investigated and presented to the Society, accompanied by a written statement of the alleged facts, as developed by such investigation as the Society or the Executive Board may deem advisable. The Society shall vote whether or not said officer or Board member shall be impeached. A vote of two-thirds of the members of the Society attending such meeting shall be necessary to impeach and notice of the pending hearing shall be included with the notice of the meeting sent to the members.

#### CHAPTER XII

ARTICLE I. ORDER OF BUSINESS.—The following shall be the usual order of business for the meetings of the Society:

##### A. Business Meeting.

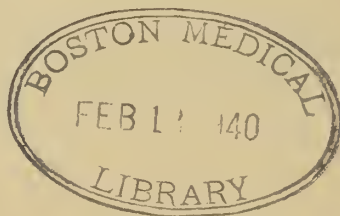
1. Call to order.
2. Reading of minutes of previous meeting.
3. Reports of officers.
4. Reports of committees and sections.
5. Election of officers.
6. Election of members.
7. Correspondence.
8. Unfinished business.
9. New business.
10. Adjournment.

##### B. Scientific Meeting.

1. Call to order.
2. Reading of minutes.
3. Emergency business.
4. Scientific program.
5. Adjournment.

ARTICLE II. RULES OF ORDER.—The Parliamentary procedure of this Society shall be governed by Robert's Rules of Order.

ARTICLE III. No action taken or attempted by the Society shall be valid or effective if in conflict with the provisions of this Constitution and By-laws.





# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

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### SHOCK THERAPY (INSULIN AND METRAZOL) IN THE NEUROSES\*

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Within recent years the therapeusis of mental disorders has veered from the psychologic toward the biologic. This change was initiated by various investigators who employed certain gaseous mixtures or narcotic agents that produced unconscious states of varying degree, with or without convulsions. Such states were followed by temporary periods of lucidity, or even by occasional complete and lasting recovery. These researches, however, were carried on rather sporadically and with no definite uniformity as regards technic and results. With the advent within the past five years of Sakel's<sup>1</sup> method of hypoglycemic shock (1933) followed closely by von Meduna's<sup>2</sup> method of induced convulsive therapy (1935) great impetus was given to the biologic approach. A startling percentage of cures, social remissions and improvements was reported by these pioneers, and more or less corroborated by other workers in the field of psychiatry all over the world. There is taking place, therefore, a change from the rather passive approach in the treatment of mental disorders to a very vigorous one. The literature on the shock treatment of the psychoses has now reached voluminous proportions and the method is now being intensively studied. It is believed that as investigations continue,

several more therapeutic agents will be found useful in the treatment of various types of so-called functional psychoses.

While this widespread investigation of the psychoses has been going on, no such vigorous attack has yet been made on the psychoneuroses. In searching the literature we find only an occasional reference advocating the shock method of treatment (insulin and metrazol) in the neuroses, and still less frequently do we find specific mention of the results obtained in these relatively more benign types of nervous disorder. The psychoneuroses are so important due to their frequency and attending disability and to their effect on the families and the community that every addition to our therapeutic armamentarium is highly desirable.

Our studies began in May 1937 with insulin and in September 1937 with metrazol therapy. The reason that metrazol was employed in the majority of cases must be quite apparent. Insulin requires an elaborate hospital set-up and special nursing. Only a limited number of patients can be treated at one time. Ten or more injections of insulin may be necessary before the shock dose is reached, making the treatment quite costly. Unless its superiority can be readily proven, insulin must be reserved for special cases.

In contrast to the insulin treatment, metrazol

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\* Read before the Society, November 30, 1938.

shock therapy can be administered in the home or in the office as well as in the hospital. At George Washington University Hospital we have been fortunate in securing the coöperation of the hospital authorities for giving treatments in the outpatient clinic. This last procedure has one serious difficulty in that the patients all too frequently manifest great fear and dislike of the treatment and refuse to return. The matter of overcoming the objections of the patient to the treatment is dealt with later but it must be emphasized that unless the patient is kept under adequate control during this period and given a sufficient number of injections the treatment is very likely to be ineffective.

#### PROCEDURE

Metrazol in 10 per cent solution is given intravenously at a rate determined by the ability of the vein to take it. Too forceful injection causes traumatism to the vein, resulting in thrombosis. The extreme rapidity with which metrazol is broken down in the body, however, makes it necessary to bring a large quantity of the solution into the circulation at the same time. If the vein is small and in danger of thrombosis, the dosage must be increased. An initial dose of 3 c.c. was recommended by von Meduna, but since there is a comfortable margin of safety between the therapeutic dose and the lethal dose, it is better to begin with a dose of 5 c.c. or even more. Apprehensive patients will almost certainly need more.

It is extremely important to give enough of this drug to promote a convulsion, since a non-convulsive dose is followed by extreme restlessness and anxiety on the part of the patient with frequent refusal to coöperate further. If the injection fails to produce a convulsion, a second dose from 1 to 3 c.c. larger than the first one should be given within 2 or 3 minutes after the first dose. In one case we have even administered a third dose within 30 minutes, the total quantity injected being 27 c.c. (6 c.c., 10 c.c., 11 c.c.) without injury to the patient.

The latent period between the termination of the injection and the onset of the convulsion is a

guide for the dosage on subsequent injections. If the latent period is under 20 seconds, the same dose may be employed; if it is over 20 seconds a larger dose should be used the next time. We found in treating our cases of hysteria that a convulsion could be produced in almost every instance by the employment of the smaller dosage, i.e., between 4 and 5 c.c., and that such convulsions could be obtained uniformly without the necessity of increasing the dosage. This, however, was not true in the other types of nervous disorders reported.

It is well to have one or two assistants present at the time of the injection in order to avoid the complications of the intense muscular exertion occurring during the convulsion. At the onset of the convulsion, the mouth is opened widely, the body and limbs jerk two or three times, the upper limbs are thrown widely to the side and then brought strongly in extension and pronation down toward the pubis. The first abduction of the arm is sometimes sufficiently forceful to dislocate the shoulder. This may be prevented by holding the arm to the side. Dislocation of the jaw is not at all uncommon, but reduces itself, and in some respects is fortunate, because the tongue is less apt to be injured when the masseters contract. Muscular and tendon laceration, particularly around the rib margin, is the cause of pain on breathing and coughing, and there are reports of transverse spinous processes torn off from the vertebrae owing to the intense muscular contraction. These complications are not contraindications to further treatment.

The convulsion lasts approximately 40 seconds and is tonic in character, terminating with a few clonic jerkings but no jactitation. The color of the patient becomes somewhat grey and a little cyanotic, and at the end of the convulsion deep respiration begins. In the course of 10 minutes the patient rouses from coma in a confused condition which gradually clears up in the course of an hour or so. If the patient has received the injection in the physician's office or in the outpatient clinic he may then be taken home by a responsible relative and encouraged to remain active until the next treat-

ment. The bladder and rectum should be evacuated before the administration of metrazol on account of possible soiling, but we do not believe in giving enemas or in restraining the patient in such a way as to increase the fear of the treatment that the patient naturally has. Everything should be done to encourage the patient to continue treatment until a state of confusion develops that persists on the days when the treatment is not administered.

The treatment may be given from 3 to 5 times on consecutive days and then continued on alternate days or twice a week. The success of the treatment may be gauged by the subsidence of emotional tension and the clearing up of the pathologic ideas and also by the inability of the patient to remember certain events such as visits from relatives, details in the newspapers, and food eaten at the previous meal. This state of confusion can be attained more rapidly by prolonging the period of apnea following the convulsion by closing off the nose and mouth until the corneal reflex disappears, or until the heart beat is slow, irregular and weak. This may require an additional 30 to 60 seconds. Aminophyllin should be kept in readiness in case cardiac or respiratory failure occurs.

As the injections are continued and the confusion becomes more marked there is usually less objection on the part of the patient to continuing the treatment.

It has been our experience that neurotic patients usually require fewer doses of metrazol in order to cause subsidence of their symptoms than do psychotic patients.\* Some neurotic patients are completely relieved of their preoccupations after one or two convulsions. However, the injections should be continued until a series of 6 to 12 is given, or whatever number is necessary to produce a degree of forgetfulness and confusion that in our opinion is the therapeutic goal in this form of treatment.

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\* A study of psychotic and borderline patients treated under similar circumstances by insulin or metrazol is in course of preparation.

## OBSERVATIONS

1. *Fear Reactions.* Certain patients, whether hospitalized or ambulant, show increasing fear and aversion to the treatment. This is especially true after a few convulsions, as the clinical picture shows improvement, and is manifested usually by great concern and anxiety previous to the injection. In the ambulant cases families often report difficulty in bringing the patients for treatment. At times, even when a patient has reported, he attempts all sorts of alibis to avoid treatment. While the fear reaction is similarly present in patients treated in the hospital or in their homes, the patients are nevertheless under better control so that the premature termination of treatment is less likely to occur. This premature cessation of treatment appears to be the only disadvantage in employing the ambulant method. The best method of avoiding the fear reaction is to secure a convulsion every time. Many authors speak of the fear reaction as being itself the therapeutic agent not only in insulin and metrazol therapy, but in all shock procedures. This belief probably springs from the fact that deteriorated patients are incapable of manifesting fear and that poor results are encountered in this class. In our experience the stoical patients have done as well as the apprehensive ones, possibly better, because as a group they have continued the treatment as long as seemed to us desirable.

2. *Dosage.* The optimum duration and frequency of treatment are still undetermined and require further study. In most psychiatric hospitals the treatment consists of 2 or 3 convulsions a week. Workers in the Worcester State Hospital recently reported daily injections. In our group of cases, that is, the neurotics, treatments are given 3 times a week, or at times daily. Termination of treatment depends upon progress of the patient. Patients rarely require more than 10 convulsive doses. Unless improvement is shown following the third convulsive seizure the results are apt to be unfavorable.

3. *Awakening State.* Following the passage of the stupor and confusion, the patients appear less tense and are sometimes euphoric. They



are uniformly amnesic for the convulsion and it is some time before they can remember their former complaints or even receiving the injection. If a patient is instructed to count while the injection is being given, he may reach "30," but after regaining consciousness, on being asked how far he had counted, he may remember only "10."

4. *Chronicity.* Reports on the shock treatment of the psychoses until recently stressed the fact that the earlier that treatment was initiated the better the results to be expected. The most favorable results were reported in cases with symptoms of less than 6 months' duration. A less favorable percentage of remissions was obtained in those cases under 18 months' duration, and rather discouraging results in those of longer duration. It was concluded, therefore, that the duration of the psychosis was the important feature in the prognosis. This attitude, however, is being modified. Winkelman<sup>3</sup> in a recent report, while indicating that the time element is an important factor in the final outcome of the treatment, asserts that the most important single element is the presence of deterioration. He reports very good results in prolonged cases in which the deterioration has been slight, and concludes that the lack of deterioration is the common denominator in these cases. Bennett<sup>4</sup> also reports excellent results in long-standing affective disorders. Low<sup>5</sup> concludes that while the time element in the schizophrenic group seems all-important, a higher rate of recovery, regardless of the duration of the disease, is manifested in the affective disorders. Our experience with the neuroses is similar in that chronic cases are often amenable to treatment, although a prolonged fixation, either psychasthenic or hysterical, is admittedly unfavorable.

5. *Psychotherapy.* It is generally believed that post-convulsive psychotherapy should be the simplest. Any suggestion by the physician of the psychopathologic sources of the original conflict is distasteful to these patients and, we believe, serves to encourage introversion and preoccupation. The patients are dissuaded

from exploring the causes of their illness, are persuaded to indulge in physical activity in a further effort to dissipate the emotional tensions, and are allowed to find a satisfactory outlet for their activity with encouragement and gentle reëducation.

#### RESULTS OF METRAZOL THERAPY

We have tabulated our results under the heading of recovery, improvement and failure. By recovery we indicate freedom from all the complaints, with complete social and occupational restoration. By improvement we mean quantitative and qualitative improvement of symptoms, with return to adequate social and occupational adaptation. In no case is "recovery" or "improvement" to be interpreted as a transformation of the neurotic personality in the sense that no further trouble may be anticipated. Nevertheless, relapses have occurred quite infrequently thus far and are listed as failures (table 1).

Four of the 6 failures were inadequately treated. A patient with a reactive depression never had a convulsion, refusing treatment after the third injection (4 c.c.). Another case, also a reactive depression, had only 1 injection with 1 convulsion but did not return for further treatment. The same holds true of 1 case of chronic tension state and 1 of chronic alcoholism; each patient after having convulsions following the first injection refused further treatment. Obviously these 4 cases were failures because we were unable to persuade them to continue treatment. Another patient, the fifth, suffering from an obsessive-compulsive neurosis, showed marked improvement with 2 convulsions following 3 injections but developed a marked aversion to further treatment. The sixth failure, a patient with anxiety neurosis, received 7 injections with only 4 convulsions. The initial convulsive dose was 4 c.c. Due to marked fear reaction, we believe, 3 subsequent increasing doses failed to produce convulsions and it was necessary to employ 10 c.c. to produce the last convulsion. On two occasions this patient refused the second injection when the

first failed to produce a convulsion and he spent a miserable 48-hour interval between treatments. He refused further treatment after the fourth convulsion and showed decided improvement for a short time but then relapsed.

the idea that she could not look anybody in the face. She stated, "I look at them to find out what effect I am having on them; at first I see a glimmer of interest, then it seems to change—I guess there is some change in the expression on my face." She had some feelings of unreality and a great sense of fatigue that did not clear

TABLE 1  
Results obtained by metrazol shock therapy in 30 cases from September 1, 1937 to October 15, 1938

| CLASSIFICATION                | NUMBER OF CASES | AVERAGE AGE | DURATION OF SYMPTOMS | AVERAGE NO. OF INJECTIONS | AVERAGE SHOCKS | HIGHEST SHOCK DOSAGE (AVERAGE) | RESULTS                                   | DURATION      |
|-------------------------------|-----------------|-------------|----------------------|---------------------------|----------------|--------------------------------|-------------------------------------------|---------------|
| Obsessive-Compulsive Neurosis | 7               | 27          | 13 months            | 6 plus                    | 5 plus         | 6 c.c.                         | Recovery 5<br>Improvement 1<br>*Failure 1 | 7 months plus |
| Anxiety Neurosis              | 6               | 36          | 3.4 years            | 6.5                       | 5              | 7.5 c.c.                       | Recovery 3<br>Improvement 2<br>Failure 1  | 5 months      |
| Reactive Depressions          | 7               | 36.5        | 21 months            | 3 plus                    | 2 plus         | 6 c.c.                         | Recovery 2<br>Improvement 3<br>†Failure 2 | 5 months      |
| Conversion Hysteria           | 5               | 34          | 14 months            | 5                         | 5              | 6 c.c.                         | Recovery 4<br>Improvement 1               | 5.5 months    |
| Chronic Tension States        | ‡3              | 34          | 3 years              | 4.5                       | 3              | 6.5 c.c.                       | Recovery 1<br>Improvement 1<br>Failure 1  | 11.5 months   |
| Post-Traumatic Neurosis       | 1               | 42          | 5 months             | 7                         | 7              | 10 c.c.                        | Improvement 1                             | 3 months      |
| Chronic Alcoholism            | 1               | 35          | 2 years              | 3                         | 1              | 11 c.c.                        | Failure 1                                 | 2 months      |
| Total                         | 30              |             |                      |                           |                |                                | Recovery 15<br>Improvement 9<br>Failure 6 |               |

\* Failure represents a case with 3 injections, 2 shocks, with temporary improvement but further treatment refused.

† These 2 failures consist of 1 case with 3 injections and no shocks and 1 case with 3 injections and 1 shock, with treatment incompleting in both cases. Two of the improved cases were each of 4 years' duration with only 2 shocks each.

‡ These 3 cases represent very chronic states. The improved case was of 6 years' duration with 5 injections and 2 shocks, and improvement for 13 months. The failure represents 1 case of 1 year duration with 1 injection and 1 shock, and treatment not completed. The recovered case was of 2 years' duration with 7 injections and 6 convulsions, and freedom of symptoms for 10 months.

Note: In the hysterical group the most uniform results were obtained in regard to convulsions, 23 convulsive states being produced with 24 injections.

### ILLUSTRATIVE CASES

Case 1. Miss D. R., aged 27, a stenographer, was referred by Dr. C. S. White. She worked all day, went to school in the evening, kept house with a girl friend, and attempted to lead a social life. She was getting along fairly well until some emotional difficulties in a love affair caused a breakdown in June 1937. She became tense, irritable, nervous, worried, and developed

up after a vacation. Metrazol treatment was started on September 22, 1937. She received 6 injections, 4 of which were followed by convulsive seizures. This left her rather confused, but abolished her anxiety and the feelings of unreality and fear. She reported on October 20, 1937 that she was quite at ease when talking with people, no longer had any trouble facing them and considered herself well. She has remained well for over a year. Diagnosis: psychoneurosis, tension state.

**Case 2.** Mr. W. R., aged 36, a telephone linesman, was first seen in the George Washington University Dispensary. For a year he had been complaining of nervousness and irritability. The slightest noise would upset him. His temper was easily provoked and he had to hold himself back to keep from injuring his wife and children and fellow workers. He would immediately regret his flare-up and subsequently be profuse in his apologies. He tried to avoid people and his family for fear he would do them bodily harm. Treatment was instituted December 14, 1937. In all, 3 metrazol injections were given over a period of 6 days. His symptoms cleared up immediately and he has remained well for the past 11 months. Diagnosis: obsessive-compulsive neurosis.

**Case 3.** Miss E. H., aged 27, a hospital librarian, became very tense and apprehensive in March 1938 and complained of cardiac symptoms, such as palpitation, etc. When the father, who had been ill for some years, committed suicide shortly thereafter her symptoms increased in severity. She improved after a short rest on a farm but soon relapsed. She was admitted to Duke University Hospital, where she had been employed, and careful examination revealed no physical basis for her complaints. She was discharged unimproved at the expiration of 10 days. In June 1938 she complained of tingling in her fingertips and of fine tremors and jerky movements in her extremities. She also mentioned specks before her eyes. Her right arm became heavy. There was some depression with crying spells. Her symptoms suggested multiple sclerosis but neurologic examination was completely negative. Upon being asked, "Do you think you have multiple sclerosis?" she burst into tears and admitted reading up on various neurologic disorders, stating she had finally become convinced that she had multiple sclerosis. Reassurance had previously been attempted but without success. Metrazol was first employed, September 8, 1938. Five injections every other day produced 5 convulsions. She showed immediate improvement. A recent communication from her indicates she is regularly employed and free from all symptoms. Diagnosis: anxiety neurosis, hypochondriasis.

**Case 4.** Mrs. B. B., aged 32, a housewife, in 1924 went through a depression lasting for a little over a year, which required hospitalization at Sheppard and Enoch Pratt Hospital for a few months. A similar attack occurred in 1931, lasting about 7 months. Her present attack started in June 1938 shortly after she divorced her husband. Her complaints were: "Everything is hopeless—it is too late. I move my eyes and can feel no motion. My brain does not appear to work. Everything I do or have done is wrong." She was restless, cried frequently and refused to eat. Five injections of

metrazol were given, with 4 convulsions, the initial convulsive dose being 5 c.c. and the final convulsive dose 7 c.c. The patient was markedly confused after her convulsions; she vomited a great deal; it was necessary for her to remain in bed the entire day following each convulsion. She stopped crying after the second convulsion. Her depression then started to lift and she admitted feeling better. Marked fear reaction was noted prior to the third and fourth convulsions. She refused further treatment at this time, stating she felt well. It was believed that treatment should be continued, but despite the refusal she has remained symptom-free since June and seems to be in the best of spirits. Diagnosis: reactive depression.

**Case 5.** Mrs. M. R., aged 35, was referred by Dr. Braden. She complained of numbness, tingling and weakness of the left side of the body of 3 days' duration and evidently of hysterical origin. There had been considerable domestic difficulty and the patient believed that she had been injured during an altercation. She was given 3 injections of metrazol on successive days. Power and sensibility returned to the left side and in about 2 weeks' time she was able to return to work with enthusiasm and energy, meanwhile having arranged for a separation from her husband. Diagnosis: conversion hysteria.

#### RESULTS OF INSULIN THERAPY

Our observations on insulin are quite meager, since only 3 neurotics have been treated by this method, with 2 successes and 1 failure. An example of insulin shock therapy in a post-traumatic neurosis is given in Case 6.

**Case 6.** Mr. G. E. C., aged 29, an inspector, was referred by Dr. Aaron Dietz. He sustained a concussion of the spinal cord on March 30, 1937 in an automobile accident. He suffered severe pain in the back and temporary retention of urine, was confined to bed for 4 weeks, and was then unable to return to work. When first seen on May 26, 1937 he complained of headache, dizziness, irritability and anxiety, and showed flushing, sweating, tachycardia and tremor, a very marked emotional response which was considered to be indirectly related to the accident. Physical examination was substantially negative and lumbar puncture findings were normal. Insulin treatment was started on May 28, 1937. He received 12 injections in all, the highest dose being 180 units, but coma developed only 3 times. There was almost immediate abolition of the anxiety, and while the pain in the back continued, the patient improved and has worked steadily since September 1, 1937. Figure 1 shows his appearance before, and figure



2 after treatment. Diagnosis: anxiety neurosis, post-traumatic.

#### COMMENT

A. E. Bennett<sup>4</sup> of Omaha, while employing metrazol shock therapy especially in the treatment of depressive states, reported improvement following its use in the neuroses. Schächter<sup>6</sup> noted improvement in 2 cases of hysteria, 4 anxiety states and 3 depressions. He stated that the shock produced a cessation of anxiety state and that his patients were immediately relieved of fear. Schönmehl<sup>7</sup> used metrazol as a means of differentiating hysterical convulsions from true epilepsy and noted that its use benefited patients suffering from dazed and stuporous

treatment with narcosis and fever. After 4 metrazol convulsions they disappeared and 6 months later the patient was still free from symptoms and gainfully employed. The third patient, suffering from hypochondriasis of 5 years' duration, recovered from all complaints after 4 metrazol convulsions, and for the 3 months up to the time of the report she had resumed care of a family.

#### CONCLUSIONS

Shock therapy by means of metrazol or insulin can be employed satisfactorily in certain cases of neurotic persons. It is not claimed that the personality of these patients is altered nor that their difficulties have been forever done away



FIG. 1. Case 6. Appearance before insulin therapy. Diagnosis: spinal concussion, anxiety neurosis. May 26, 1937.



FIG. 2. Case 6. Appearance after insulin therapy. April 10, 1938.

states. A. A. Low<sup>5</sup> and his co-workers at the University of Illinois, in reporting on the metrazol shock treatment of the "functional" psychoses, include in their series of cases 3 patients with psychoneuroses, all of whom recovered. Of these 1 patient had an anxiety neurosis requiring hospitalization the greater part of 5 years preceding treatment, and was completely relieved of his symptoms by metrazol. The second patient was described as suffering from "shell shock" neurosis following the stock market crash in 1929 and exhibiting marked choreiform movements which resisted

with, but in the majority of cases after from 3 to 10 convulsions the patients no longer suffer from the complaints that brought them to the physician.

The treatment, while dramatic (not to say harrowing!), is rapid, efficient, relatively safe and inexpensive, and furnishes a short-cut to the goal desired by the patient, namely, freedom from annoying symptoms. The merciful lapse into unconsciousness while the convulsion is going on makes the treatment tolerable for the patient, even though the intensely disagreeable sensation, the "roller-coaster to hell" feeling, is present.

While the exact mode of action is not understood, we believe that the convulsion, with the arrest of the cerebral circulation and the anoxemia of 60 seconds or more, produces some damaging effects upon the terminal prolongations of the cortical nerve cells so that cerebation is temporarily impaired. When consecutive thought is impossible individuals are no longer capable of cogitation and rumination, and the perplexity and anxiety induced by failure to find a solution to the problems tend to disappear. The relief of tension is followed by subsidence of the secondary phenomena such as obsessive thinking, insomnia, fear and anxiety, and hysterical palsies. Patients are subsequently able to adopt a more rational and less emotional attitude toward their problems.

During the period of mild confusion following the completion of the treatment, reëducation and readjustment may be carried out. It is emphasized that probing into the sources of the

illness is upsetting to the patient and is to be avoided. Once the tension is relieved the patient finds within himself psychologic resources that aid him in readjustment to his life situation.

#### BIBLIOGRAPHY

1. SAKEL, M.: Neue Behandlungsart Schizophreniker u. verwirrten Erreger. Proc. Gesellschaft der Aerzte in Wien. Wien. klin. Wochenschr., 1933, **46**, 1372.
2. MEDUNA, L.: Versuche über die biologische Beeinflussung des Ablaufes der Schizophrenie; Campher- und Cardiazolkrämpfe. Ztschr. f. d. ges. Neurol. u. Psychiat., 1935, **152**, 235.
3. WINKELMAN, N. W.: Metrazol Treatment of Schizophrenia. Am. J. Psychiat., 1938, **95**, 303.
4. BENNETT, A. E.: Convulsive (pentamethylenetetrazol) shock therapy in depressive psychoses. Am. J. M. Sc., 1938, **196**, 420.
5. LOW, A. A., and others: Metrazol shock treatment of "functional" psychoses. Arch. Neurol. and Psychiat., 1938, **39**, 717.
6. SCHÄCHTER, A.: *penta*Methylenetetrazol in therapy of depressive states. Gyógyászat, 1937, **77**, 162.
7. SCHÖNMEHL: Provokation von epileptischen Krampfanfällen. Versuche und Ausblick, München. med. Wchnschr., 1936, **83**, 721.

#### ABSTRACT OF PAPER READ BEFORE THE SECTION ON NEUROLOGY AND PSYCHIATRY OF THE SOCIETY, NOVEMBER 3, 1938

"THE NERVOUS CONTROL OF THE URINARY BLADDER," Orthello R. Langworthy, M.D., Johns Hopkins University, Baltimore.

In order to assess the value of presacral neurectomy and to understand the control of vesical activity by different components of its innervation, it is important to know the relations of the nerves to the structures of the bladder and urethra. The parasympathetic and sympathetic fibers to the bladder as well as the afferent fibers which run with these trunks end in certain distinct structures in the vesical wall. The parasympathetic nerves supply the motor endings to the detrusor muscle and urethra. These endings are very numerous in well stained preparations. The afferent fibers which carry stretch stimuli run with the parasympathetic nerves and enter the cord through the posterior sacral roots. Other medullated fibers of the system form encapsulated endings in the subserosa and submucosa at the base of the bladder. Nonmedullated sensory fibers end in the submucosa particularly over the dome of the bladder.

Sympathetic fibers innervate the blood vessels of the bladder and urethra. They also supply motor endings to the ureters and their continuation into Bell's muscle and the muscle of the crista of the urethra. This group

of muscle forms the trigone in man. No loss of motor endings in the muscle of the detrusor or urethra could be seen after degeneration of the postganglionic sympathetic fibers. Unmyelinated sensory fibers which run with the sympathetic trunks end in the submucosa at the base of the bladder particularly over Bell's muscles and the crista of the urethra.

The parasympathetic fibers control vesical filling and the normal initiation and carrying through of micturition. All the other nerves to the bladder and urethra can be cut and these functions remain quite normal. Severance of the parasympathetic trunks leads to marked disturbances of micturition.

The relation of the sympathetic innervation to the bladder and urethra is not understood. No voluntary control of storage of urine or micturition is mediated over intact sympathetic fibers after the parasympathetic pathway is cut. The sympathetic fibers are motor to the ureters. They have a sexual function in the male, because their stimulation produces a contraction of the vasa deferentia, seminal vesicles and prostate. The Bell's muscles and crista show some movement on stimulation of the sympathetic trunks. This may close off the posterior urethra and prevent the flow of semen backward into the bladder. Stimulation of the sympathetic fibers produces changes in vesical pressure, if the volume is constant. Section of the postganglionic sympathetic fibers reduces the vesical capacity in the

(Continued on page 96)



## CONGENITAL CYSTIC DISEASE OF THE LUNG\*

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Congenital cystic disease of the lungs remains an unsatisfactory clinical entity. The etiology of the condition is debatable, the diagnosis without aid of the roentgenologist is hardly possible, the treatment is often hazardous, and the prognosis cannot be accurately given in many cases. The condition has been found in the five-month fetus as the anatomical cause of death and has also been discovered as an incidental factor in the aged individual.

Schenck<sup>1</sup> has called attention to the plethora of synonyms for cystic lung disease and believes that a uniform term, "congenital cystic disease of the lung," while not adequately descriptive, will provide a suitable basis for classification. The logic of his belief is well exemplified when one considers the multiplicity of titles found in the literature. The more common are atelectatic bronchiectasis, congenital cystic malformation of the lung, honeycomb lung, cystic fetal bronchial adenoma, congenital pulmonary lymphangiectasis, telangiectatica, bronchiolectasis, multiple congenital cysts of the lung, etc.

A description of this unusual lung disease is in order. Unfortunately, there is no single picture which will adequately portray the usual finding. Box,<sup>2</sup> however, closely approaches with his classical presentation of "honeycomb lung." He states that in some cases the condition is bilateral and universal and in other cases limited. The cavities are multiple, more or less spherical and generally larger toward the periphery and smaller toward the center of the organ. The cavities are lined by a smooth whitish lining membrane, communicate with each other by small circular orifices or are incompletely separated by sharp falciform septa, and are either empty or contain a certain amount of puriform material. Microscopic examination, he further states, reveals three different kinds of cavities.

Some are bronchiectases; some are atriectases combined with emphysema, and some are formed by necrosis of lung tissue. The frequency with which the bullae project beneath the visceral pleura is in itself evidence that all are not simple bronchiectases, for the bronchi do not abut upon the serous membrane.

Anspach and Wolman<sup>3</sup> state that congenital pulmonary cysts are found in individuals of all ages and in a variety of forms. They are usually multiple and may be scattered, grouped, or confluent. Usually they are restricted to one lobe; occasionally the distribution is through both lungs. They may contain mucoid fluid, desquamated matter, air or pus.

The pathogenesis remains a subject for lively debate. Insufficient data and too few cases prompted untenable or dubious conclusions. As to the true cause, the multiplicity of claims made leaves the reviewer somewhat confused, and rather than accept a single etiologic factor it would seem more logical to agree with the statement of Oughterson and Taffel<sup>4</sup> that it is more reasonable to suppose that pulmonary cysts are not essentially different from other cysts of any other parenchymatous organ of the body and may be congenital, infectious, mechanical or neoplastic.

The knowledge of the embryologic development of the lung<sup>5</sup> may simplify somewhat the concept of cystic disease. The rudiment of the respiratory organs appears as a median longitudinal groove in the ventral wall of the pharynx. The groove deepens and its lips fuse to form a septum which grows from below upward and converts the groove into a tube, the laryngo-tracheal tube, the cephalic end of which opens into the pharynx by a slit-like aperture formed by the persistent anterior part of the groove. The tube is lined by endoderm from which the epithelial lining of the respiratory tract is developed. The cephalic part of the tube becomes the larynx and its next succeeding part the tra-

\* From the Pathological Laboratory, Sibley Memorial Hospital. Read before the Society, March 30, 1938.



chea, while from its caudal end appear the two lateral outgrowths, the right and left lung buds, from which the bronchi and lungs develop. The right and left lateral buds grow out behind the ducts of Cuvier and are at first symmetrical, but their ends soon become lobulated, three lobules appearing on the right and two on the left; these subdivisions are the early indications of the corresponding lobes of the lungs. The buds undergo further subdivision and ramifications and ultimately end in minute expanded extremities, the infundibula of the lungs. After the sixth month the air sacs begin to make their appearance on the infundibula in the form of minute pouches. The pulmonary arteries are derived from the sixth aortic arches. During the course of their development the lungs migrate in a caudal direction, so that by the time of birth the bifurcation is opposite the fourth thoracic vertebra. As the lungs grow they project into that part of the celom which will ultimately form the pleural cavities, and the superficial layer of mesoderm enveloping the lung rudiment expands on the growing lung and is converted into pulmonary pleura.

An interesting observation has been made in connection with lung development. King and Harris<sup>6</sup> state that in order to understand clearly the formation of a cyst in the lung it is necessary to analyze the lung development in the embryo. According to Simpkins, the bronchi develop as small ramifications of solid endodermal tissue, which becomes canalized almost immediately. They believe that an unknown process interferes with the canalization at some point proximal to the termination of that ramification, resulting in its occlusion and causing a portion of the radical to persist as a mass of cells. Canalization begins again distal to the occlusion, producing an isolated canalized segment with normal mucous membrane which assumes its natural secretory function. This secretion accumulates, and since it has no exit it forms a cyst. Eloesser's<sup>7</sup> observation also takes the developing lung into chief consideration. He believes that the complexity of adjoining structures simultaneously undergoing changes in

size, shape, and position render the lung peculiarly prone to developmental variations and anomalies, the number of its lobes and their position and relationship to the great vessels being subject to frequent variation. The growth and obliteration of Cuvier's ducts connecting the cardinal veins with the heart influence particularly the lower lobe.

Sauerbruch<sup>8</sup> points out that upon a developmental basis it is conceivable that a bronchus may be "tied off" when the lung is being enveloped by pleura. If a large bronchus is affected a large cyst of the lung develops. If the middle-sized bronchi are involved small cysts will develop, and if the "tying off" occurs during the last intrauterine developmental period, multiple small cysts or congenital bronchiectasis will be the result.

DeLange<sup>9</sup> expressed the belief that the developmental error consisted of an interference with the development of the alveolar tissue which leaves the bronchi unsupported and thus permits undue dilatation.

Stoerch<sup>10</sup> regards this condition as a cystic fetal broncho-adenoma. The lungs of a newborn child revealed in the right middle lobe a tumor the size of a hen's egg made up of variously sized alveolar spaces which reminded him of emphysematous lungs. The cavities into which opened glandlike structures were lined with simple columnar epithelium and showed muscle fibers in their walls. The connective tissue resembled the embryonic type. The bronchus to this lobe was not found. He described a second similar case.

The syphilitic etiology has not been overlooked, but few investigators subscribe to this theory. The occasional case in which syphilis has been associated must be regarded in the present light as a concomitant condition. There are insufficient data to support cystic disease as a luetic stigma. Sandoz,<sup>11</sup> however, is one of the few men who considers an intrauterine syphilitic process a factor and believes that it produces a faulty development of alveoli from the small bulb ends of the bronchial tree in the embryo. He describes narrow, branching,

glandlike structures running in all directions which opened either into the smaller bronchi or into the cyst cavities. The epithelium where still present was of the stratified columnar type, ciliated in many places, which with the concentrically arranged smooth muscle fibers indicated their bronchiolar origin. The mouth of these tubes frequently showed funnel-shaped widenings and occasionally gave the impression that they had been drawn into the cavities. No alveoli were present in their vicinity. He considers the cavities to be merely dilated endings of bronchi. This is not sufficient evidence to convict the treponema.

Oudendal<sup>12</sup> believes that fetal infection with syphilis may produce fetal adhesions between the parietal and visceral pleurae which bring about anomalous development.

Fetal infection of a nonluetic nature also has been advocated as a cause. Box<sup>2</sup> believes it to be a bronchopneumonic process. Several British colleagues concur. However, in many cases necropsy, while demonstrating a pneumonic process, has failed to demonstrate any connection between the two.

Douglas' case<sup>13</sup> was associated with some undetermined process, but he lays no claim to pathogenesis. A child, 15 months old, developed cervical and inguinal adenopathy, cough, and loss of weight. Death followed several weeks later from a pneumonic infection and diphtheria. Necropsy revealed a diffuse honeycombed appearance of both lungs. The cysts were filled with purulent exudate, many just beneath the pleura giving the appearance from without of emphysematous bullae. The lower part of the lung showed pneumonic consolidation. Microscopic study of the lungs revealed the cysts to be lined by flattened epithelium on a connective tissue base. No columnar epithelium was apparent in the cyst. Examination of the enlarged glands obtained at necropsy revealed a picture similar to a biopsy study made during life. No evidence of necrosis or caseation was observed. There was epithelioid cell proliferation, disorganization of normal lymph follicle structure, and a few multinuclear cells of a giant

type. No satisfactory conclusions were drawn.

Virchow<sup>14</sup> concluded that the development of a bilateral "cystic" bronchiectasis in a cretin was due to dilatation of the lymphatics and compared the condition to congenital macroglossia. The theory proposed by Virchow, say Oughterson and Taffel,<sup>4</sup> that these cysts represent lymphatic hygromata is a plausible one but limited, as the lining must be made up of a single layer of endothelium. The majority are lined by cuboidal or columnar cells.

Fleming<sup>15</sup> recently reported 5 cases, 2 with necropsy findings. One of these cases revealed a cystic structure in the middle lobe near the hilum. It did not appear to communicate with the bronchial system. Histologic study revealed only small epithelial-lined areas, and it is quite suggestive that this cyst is of lymphangiectatic origin.

Grawitz<sup>16</sup> divided fetal bronchiectases into two types, "die telangiectatische angeborene und die universelle angeborene Bronchiectasien." The first type produces a cystic degeneration of the whole bronchus with all its branches and simulates an ovarian cytoma (he compared this to congenital polycystic kidneys), while in the second type one finds small ectases which impress one as dilated lymph channels and are even more similar to a ranula pancreatica.

He described 4 cases in each of which there was a single main cyst into which all side cysts opened. In each case the malformation was localized in a single lobe which was markedly enlarged. The diagnosis of bronchiectasis was made by the presence of ciliated epithelium and communication with a bronchus. No lung pigment was present. The ages varied—a 5-month fetus, a newborn, a 25-year-old male, and a year-old female.

As Grawitz has pointed out, there are usually one or two types of cavitation. Kauffman<sup>17</sup> gives good descriptions. In one type composed of small cavities, those situated subpleurally and meeting with less resistance become the largest, often attaining the size of a pea. The lung presents a spongy emphysematous appearance, and the cavities, which separated from



each other by thin falciform septa appear to lie in rows, may be connected with the larger bronchi or completely shut off from them. In the other and much rarer type, the entire lung segment is changed into a large cyst, on the inner wall of which numerous falciform septa form small pocket-like spaces, or are completely flattened out. There may be no connection whatever with the bronchi, or there may be several small connections which would indicate a single cyst resulting from the confluence of many smaller cysts. Whichever may be the case, the cyst is filled with a watery fluid, or sometimes a slimy one with air, or both.

Kauffman believed that this condition was due to a peculiar change in which hypoplasia permitted a greater development of the larger bronchi but not of the alveoli. He also considered that in certain cases the bronchial dilatation occurs through the retention of secretion behind a bronchial stenosis.

In Koeckert's case<sup>18</sup> a large cyst containing air and fluid in the upper left lobe of a white female expiring one and a half hours following birth was believed to be of bronchiolar origin. His basis for this belief was the somewhat thickened pleura, the areas of unexpanded lung, the cellular infiltration, the irregularly distributed muscle fibers in the stroma, the dilatation of the smaller bronchi, the epithelial proliferation, the plaques of smooth muscle fibers lying between the epithelium and cartilage, the cartilage islands, the thickened connective tissue layer below the epithelium, and the ciliated columnar epithelium lining the cyst.

This case offers further interest. The 75 c.c. of fluid present was carefully aspirated and examined. It was chemically suggestive of amniotic fluid. No conclusions as to its significance were drawn.

In many cases concomitant congenital malformations have been noted. Koontz<sup>19</sup> reported such a case. An infant, after living a rather precarious existence for several days which included surgical intervention, expired. Necropsy established the following anatomical diagnoses: congenital cysts of the lungs; cardiac

hypertrophy and dilatation; chronic passive congestion of the liver, bloody effusion into the pleural, pericardial and peritoneal sacs; Ramstedt operation for pylorospasm.

Koontz believes that the cause of the cysts in his case was a constriction of the walls of the bronchioles with a dilatation of the part distal to it. The cause of the excessive development of the mucous membrane which forms the constriction is not easily disposed of.

Our own case is reported with permission of the attending physician, Dr. Russell K. Hollingsworth.

#### REPORT OF CASE

Mrs. G., a white female, aged 21, aborted spontaneously in 1936 after a gestational period of 4 months. Conception occurred again, and the expected date of confinement was set at November 22, 1937. Her physical condition at the start of and during pregnancy was quite satisfactory and at no time was there evidence of toxemia. On October 15 the membranes ruptured spontaneously and labor pains followed. Upon admission to hospital the blood pressure of 140/100 was the only unusual feature of the physical examination. Pelvic measurements were ample and the fetus was viable in the L. O. A. position. The fetal heart sounds averaged 144 per minute. A nonviable female was delivered spontaneously without difficulty some 24 hours later. The placenta weighed 2 lbs. 4 oz. and was relatively large. Otherwise there was no suggestive pathologic feature. Wassermann and Kahn tests on the maternal blood proved negative.

At autopsy there was revealed a white female approximately 8 months of age. The head was altered somewhat in shape by molding. The pupils were dilated, rounded, and equal. The conjunctivae were cloudy. Ears, nose and mouth were negative. There was no palpable adenopathy. The abdomen was considerably distended. The labia majora and minora appeared to be overdeveloped. The fingernails were just short of the tips.

On section there was a small amount of orange-colored fat. The musculature was pink, finely striated, and small in amount. The thoracic viscera presented an abnormal relationship to be described later. The abdominal viscera were apparently normal in position but bathed in an excessive amount of serosanguineous fluid.

The stomach was normal in position and relation and slightly distended with gas. The duodenum was normal in relation to the liver. The small intestine appeared normal. The ascending colon rose somewhat



higher than normal but presented no lesion. The balance of the colon was essentially negative.

The spleen was normal in relationship, greatly enlarged, dark red and firm. The capsule stripped rather easily, revealing a firm, red parenchyma.

The pancreas was normal in position and relation, firm and presented no specific lesion.

The kidneys were surrounded by a small amount of fat. The capsule stripped easily, revealing the original lobulations. The cortical-medullary proportions were correct and did not reveal any pathologic features.

The adrenals were normal in position, quite firm and showed no hemorrhage or other lesion.

In the occipital region the head was quite flattened and the occipital bone could be moved freely. The parietal bones overlapped slightly but there were no true articulations between any of the bones of the skull. On section the scalp appeared to be of normal thickness but on its undersurface in apposition to the

falx as well as a tear measuring approximately 0.6 cm. in diameter. There were also several lesser tears. The falx and tentorium cerebelli did not reveal any changes.

On opening the thorax an anomalous condition was discovered. A large congenital polycystic structure was

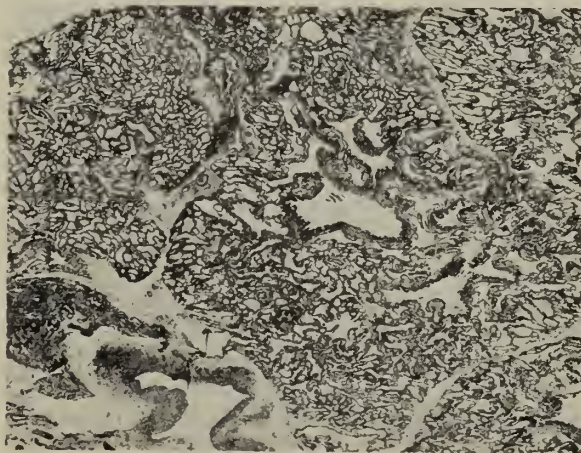


FIG. 2. The cystic left lung



FIG. 1. The heart and lungs. The left lung has been sectioned and shows the cystic condition.

bone there was a considerable number of hemorrhagic areas, some being quite diffuse. Windows were cut in the parietal bone and a large amount of serosanguineous fluid exuded. The brain was quite soft and on removal there was seen some hemorrhagic extravasation in the

found to occupy the left thoracic cage and a good portion of the right cage, hiding from view the heart and a portion of the right lung (fig. 1). Upon closer examination it was noted that the left upper lobe was shrunken and atelectatic and the cystic mass represented the lower left lobe.

The lower left lobe presented a dilated, sac-like appearance, was red and pyramidal, measuring 7 cm. in longitudinal diameter by 5.5 cm. transversely by 5 cm. in thickness. It was pearly gray, and its surface was irregular due to the projection of small, bullous-like protuberances. At the free portion of this lobe there was an auricular-like appendage which on section proved to be atelectatic. The balance of this lobe was cystic with a large principal cavity surrounded by a smooth, grayish white wall. Dense, fibrous, whitish bands were situated on this wall and by their frequent interlacing and crisscrossing gave a coarsely reticulated appearance to this structure. Upon removal of the fluid there was found a thin wall averaging from 1 to 3 mm. in thickness except in the upper portion, where there appeared to be a large area of unexpanded lung. The fluid was of a serous nature, colorless, and presented no gross characteristic of special note.

The right lung was deep red, congested, presented 3 well-defined lobes, and on section proved to be atelectatic throughout.

The heart presented was essentially negative. The foramen ovale and ductus arteriosus were still patent, but no evidence of any congenital defect was noted.

Microscopic examination of the tissue presented no

features worthy of comment except for the cystic lung. All Levaditi stains failed to reveal any evidence of treponema. Sections from the anomalous lung revealed numerous irregular, distorted and narrow, branching, alveolar-like structures which showed in many instances communication with atypical bronchioles and bronchi (fig. 2). The epithelial lining of these structures varied considerably from that of a flat, somewhat squamous cell to the cuboidal and low columnar variety. The appearance of this tissue also varied in different locations, some areas being relatively loose with wide open spaces into which projected tongue-like masses containing alveolar-like cavities, while others showed considerable compression with obliteration of these spaces and the loss of the alveolar structure, there remaining only terminal and respiratory bronchioles in a more or less solidified and somewhat atelectatic pulmonary structure. In these more solid areas the cellular elements predominating were the cuboidal and squamous variety, scattered throughout a somewhat thickened connective tissue which was loosely arranged. In the more open areas the alveolar-like spaces were quite atypical, exhibited a rather diversified epithelial lining, and were supported by a scanty connective tissue matrix which was fairly well vascularized. In certain areas there appeared to be some inspissated secretion of a pseudo-mucoid variety staining pink with eosin. The large cavity was lined by a stratified columnar epithelium of closely packed cells resembling bronchial epithelium but without definitely demonstrable cilia, and showing a considerable degree of irregularity in structure. This epithelial covering was supported by a very delicate tunica propria under which was a fairly well defined layer of smooth muscle, which in turn was directly supported by a fairly large quantity of highly vascularized embryonal connective tissue. In certain areas this tissue was considerably more dense than the others and contained acini-like structures which were interpreted as young mucous glands; no cartilaginous structures were found in the wall of this cavity. In many other portions of this lung there were large irregular bronchial spaces lined by a typical stratified epithelial mucosa thrown into characteristic folds but presenting decidedly irregular and anomalous arrangements. These bronchi and bronchioles had a generous amount of smooth muscle and elastic tissue, and in some instances small cartilaginous plates were found. The pleura appeared to be somewhat thickened, consisting of a delicate subserous connective tissue, the lining being a single layer of mesothelium.

We are not prepared to state the pathogenesis in this case. We believe, however, that this condition arose as an anomaly involving the bronchi and bronchioles. Our case presents a

number of features which Koeckert accepted as a criterion for bronchial origin—thickened pleura, unexpanded lung, cellular infiltration, irregularly distributed muscle fibers, plates of cartilage. All of these are readily demonstrated in this specimen.

As to the cause of death, while the intracranial damage occasioned by the prolonged labor would have been sufficient in itself, it is problematical whether the fetus could have survived if it had had only the cystic condition to contend with.

#### SUMMARY

Much remains to be discovered in regard to the pathogenesis of congenital polycystic disease of the lung. The plethora of theories permits no single conclusion to be drawn. A partial review of the literature indicates that the bronchiogenic origin is most favored.

The case of a white female stillborn in the eighth month of gestation is reported. An anomalous condition of the left lung was discovered at postmortem examination and microscopic study revealed it to be a polycystic structure of probable bronchiogenic origin.

#### BIBLIOGRAPHY

1. SCHENCK, S. G.: *Am. J. Roentgenol.*, 1936, 35, 604.
2. BOX, C. R.: *Lancet*, London, 1907, 1, 16.
3. ANSPACH, W. E., AND WOLMAN, I. J.: *Surg., Gynec., & Obst.*, 1933, 56, 635.
4. OUGHTERSON, A. W., AND TAFFEL, M.: *Yale J. Biol. & Med.*, 1936, 9, 77.
5. GRAY, H.: *Anatomy of the Human Body*, 21st ed. Philadelphia, Lea & Febiger, 1924.
6. KING, J. C., AND HARRIS, L. C., JR.: *J. A. M. A.*, 1937, 108, 274.
7. ELOESSER, L.: *Radiology*, 1931, 17, 912.
8. SAUERBRUCH, cited by BALLON, H., SINGER, J. J., AND GRAHAM, E. A.: *J. Thoracic Surg.*, 1931, 1, 154.
9. DE LANGE, cited by CROSWELL, C. V., AND KING, J. C.: *J. A. M. A.*, 1933, 101, 832.
10. STOERCH, cited by KOECKERT (see ref. 18).
11. SANDOZ, cited by KOECKERT (see ref. 18).
12. OUDENDAL, cited by KOECKERT (see ref. 18).
13. DOUGLAS, H. C.: *J. Path. & Bact.*, 1933, 37, 123.
14. VIRCHOW, cited by BALLON, SINGER, AND GRAHAM (see ref. 8).
15. FLEMING, G. B.: *Arch. Dis. Children*, 1934, 9, 201.
16. GRAWITZ, cited by KOECKERT (see ref. 18).
17. KAUFFMAN, cited by KOECKERT (see ref. 18).
18. KOECKERT, H. L.: *Am. J. Dis. Child.*, 1919, 17, 95.
19. KOONTZ, A. R.: *Johns Hopkins Hosp. Bull.*, 1925, 37, 340.



## AUTOMOBILE ACCIDENTS AND EMERGENCY SURGERY\*

DANIEL L. BORDEN, M.D., F.A.C.S., *Associate Professor of Surgery, George Washington University School of Medicine*, AND DONALD H. STUBBS, M.D., *Washington*

The annual all-time high in traffic accidents was reached in 1937. Death to the tune of 39,700 was listed on the record. Some 1,200,000 citizens were temporarily or permanently disabled. Startling figures, these, if seriously considered!

Since practically all automobile injuries resolve themselves into surgical problems, we are faced yearly with a crop of one million or more traumatic lesions—truly a gigantic field of work that should indicate its importance to the surgeon. This field not only has great size (chart 1), but has great seriousness (chart 2).

Bringing the mass of traffic accidents down to a few cases, let's follow them through. To this end, we call upon the statistical record and experience of a local hospital treating over 10,000 accident cases in the course of a year. The efficiency of general rules set up here to control the treatment of cases has passed the test of time.

As a general rule, we as surgeons first see accident cases after they have been deposited at the hospital. The initial few moments is usually attended with pandemonium while relatives, police, and reporters battle for supremacy. A commanding confidence will isolate the patient from this abuse, after which the following general routine is worthy of careful consideration.

1. Since some degree of emotional or physical shock attends all cases, it must be treated by the use of morphine, quiet and rest, warmth, and, in extreme cases, the injection of fluids or blood.

2. For hemorrhage from large deep vessels direct pressure over the bleeding point is frequently the best emergency measure. The tourniquet, if used, should stop arterial circulation and not merely increase bleeding by venous occlusion.

3. No fracture should be moved without proper splinting to prevent compounding.

4. No examination should be considered complete until all clothing has been removed. Patients do not always know where they are hurt.

5. Alcoholism should never prevent consideration of cerebral injury.

6. All cases with suspected cerebral or so-called internal injuries should be hospitalized. Cerebral hemorrhage, intra-abdominal hemorrhage, perforation of the intestines, one or all may occur without demonstrable bruising externally.

7. Wherever there is likelihood of anaerobic organism contamination, especially with soiled traumatic wounds, tetanus antitoxin and frequently gas organism, serum should be used.

Adherence to the above suggestions should give the average accident case its fair chance toward the road to recovery. The immediate emergency treatment should be followed by restorative surgery, but every effort should be made to have the case in the best possible shape and the surgeon thoroughly informed so that he can operate without undue haste.

Unless bruises and contusions are multiple and bring the patient to the point of shock, they offer no serious problem in treatment.

Lacerations, on the other hand, are a common occurrence and may be approached as follows:

1. Use early hemostasis for definite bleeding. Ligate only when necessary.

2. Clean the wound by washing and soaking in 1 to 10,000 bichloride of mercury solution.

3. Remove all devitalized tissue and rough, torn wound edges. Make wound edges smooth and straight especially in facial injuries.

4. Approximate skin edges accurately by the use of fine, nonirritating, interrupted sutures, especially about the face.

5. Use local anesthesia by preference unless

\* Read before the Sixth Annual Postgraduate Clinic of the George Washington University School of Medicine, February 19, 1938.



there is extensive soiling with tissue damage or the patient is a child.

6. Bury a minimum amount of foreign material in traumatic wounds.

7. Close all clean fresh wounds without drainage.

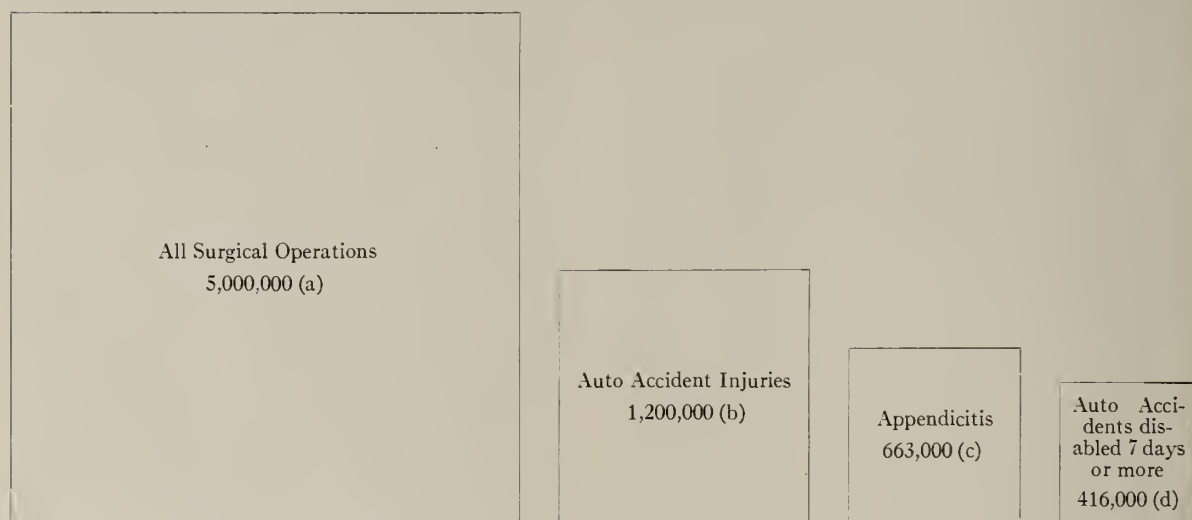
Applying all of the above rules but going a step farther in tendon injuries, it is always imperative to test tendon function as well as nerve sensation and distribution.

Because nerve and tendon repair involves time and care, it is best to use local anesthesia

early. Frequently, displaced oblique fractures of the tibia may be reduced in the first few hours by firm steady traction over a period of 5 to 15 minutes and then placed immediately in a split cast with little padding. They must be watched for swelling, but those with early reduction have a better chance of holding than those set after twenty-four hours or more of overriding with muscle contraction.

All fractures of the femoral shaft should be placed in immediate traction, usually skin adhesive, before final disposition is made of the

CHART 1



GREAT SIZE  
of the field of traumatic surgery due to automobile accidents

(a) Estimated from A.M.A. report on hospitalization for 1937.

(b) Report of National Safety Council for year 1937.

(c) The National Health Survey 1935-36, Bulletin No. 1 (U. S. Public Health Service).

(d) The National Health Survey 1935-36, Bulletin No. 3.

where it is possible to do so. Good exposure is essential to good work. In tendon injury it is almost always necessary to enlarge the field of operation over and above the laceration resulting from the accident. Accurate and definite approximation of both tendons and nerves is paramount.

More and more we are setting fractures on sight. Certain fractures such as Colles' or intertrochanteric hip breaks may usually be left one or two days with impunity and at times to advantage, but the usual displaced fracture of long bones can generally be more easily reduced

problem, such as operation, cast, skeletal traction, etc. The Kirschner wire is gaining favor over ice tongs and heavy pins for skeletal traction. It produces less trauma and the danger of infection is practically nil.

Compound fractures present a more complicated problem than simple ones. When shock is controlled, open operation without delay under general anesthesia is in order. Débridement, with as little manipulation as possible may make immediate tight closure possible. Fixation with a split cast following reduction must be followed by careful attention to swelling.

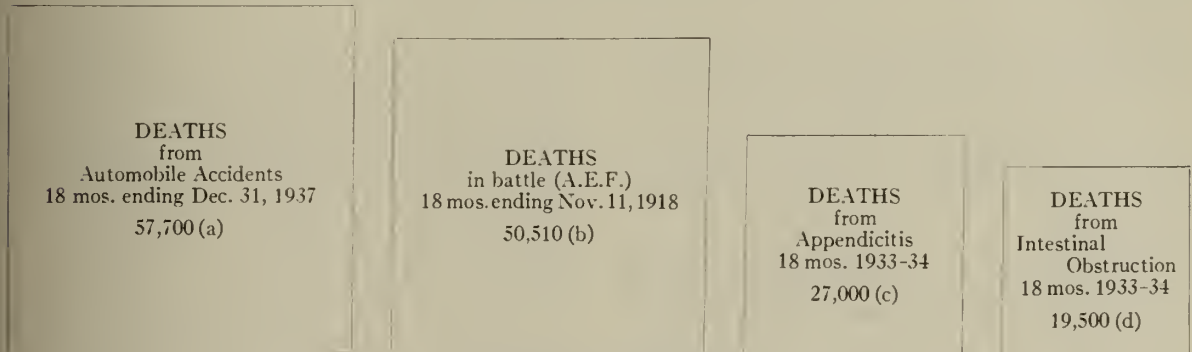
In the presence of marked circulatory or tissue disturbance, skeletal traction after débridement is recommended.

Violent propulsion of the head downward and its abrupt arrest by the cement pavement make the skull and brain susceptible to frequent injury when the propelling power is an automobile. In the treatment of head injuries, excessive narcosis that masks possible localizing cerebral symptoms should be avoided. Operate only on the few who have definite localizing signs of intracranial hemorrhage or increasing pressure or those that have compound fracture of the skull. In operating, do as little as pos-

reversed Colles' formerly seen in the days of hand cranking. The bumper fracture of tibia and fibula has moved its location from knee to the middle third of tibia, keeping pace with the changing height of automobiles. The low slung car of today strikes the pedestrian just 13 inches from the ground, producing a splintering of the tibia and fibula with a linear fracture that runs both up and down the bone.

The traffic fracture of the elbow has become common enough to deserve a name. The motorist who rests his elbow on the window sash and is then unfortunate enough to meet up with some obstruction finds himself with a most

CHART 2



GREAT SERIOUSNESS  
of the automobile accident problem—

- (a) Report of the National Safety Council for the year 1937.
- (b) Report of the National Safety Council for the year 1937.
- (c) Vital Statistics—Special Reports, Vol. 1, No. 3, Jan. 1936 (U. S. Bureau of the Census).
- (d) Vital Statistics—Special Reports, Vol. 1, No. 3, Jan. 1936.

sible as rapidly as possible. Do not disturb dangerously ill brain cases to get X-ray films of the skull. Dehydration is accomplished by limiting fluids and occasionally by the use of saline cathartics. Also, 50 to 100 c.c. of 50 per cent glucose given intravenously may speed cerebral dehydration. Conservatism is the watchword where there is brain injury.

Chest cases are as a rule nonoperative but may need general support for shock. Oxygen, either by nasal catheter or tent, helps all who show respiratory embarrassment.

The automobile has been recognized by having certain injuries stamped with familiar names. Thus, there is the chauffeur's fracture, which is a

disabling injury. The cowl fractures include those of the face and the patella. The passenger is thrown forward striking his face against the cowl, or if he is resting his knee against the cowl, the patella is broken when some sudden obstruction carries his body forward to meet the resistance.

Cowl fractures of the face are worthy of special mention. It is interesting to note that accidents to passengers in automobiles are 75 per cent more common than injuries to drivers. This is accounted for by the steadying influence of the driver's steering wheel. The passenger having nothing to brace himself against is thrown forward striking the cowl. Face frac-

tures are common and often associated with lacerations. The examining finger, before swelling has set in, is often more helpful than the X-ray film. Fractures of the nose should be molded at once and internal splints should be avoided. Depressed fractures of the malar bones can be approached and elevated by passing a Kelly forceps through a small incision over the temporal fascia and thence down under the bone to raise it into place. Proper approximation is guided by palpation of the orbital margin, and comparison with the uninjured side, later checked with X-ray films.

Projections from automobiles, such as ornaments, lights, and especially streamlined door handles, become fixed bayonets when the car is

in motion. "Over the top" with a sharp pointed door handle will and does produce mutilating injuries beyond description. These handles have been removed from all parts of the human body.

The legal angle inserts itself into all of our automobile accident problems. Medical reports, progress notes, consulting surgeons representing insurance companies, all of these and more have a part in our cases. In course of time a subpoena demands attendance at court. And thus the case is eventually closed, but not until the legal fraternity has had its opportunity to question the surgeon on every phase, both possible and impossible, relative to or bearing on the accident.

#### ABSTRACT OF PAPER READ BEFORE THE SOCIETY, NOVEMBER 16, 1938

"RECTAL LYMPHOGANULOMA," **Monte Edwards, M. D.**, Associate Professor of Surgery, University of Maryland School of Medicine and College of Physicians and Surgeons.

A specific therapy for rectal lymphogranuloma has so far escaped discovery. The initial successes reported from the intravenous administration of the salts of tin and antimony, the intradermal and intravenous injection and Frei antigen, have not been substantiated on further study. Sulfanilamide has been strongly recommended recently, but it is suspected that the good effects are the consequence of that drug's action on secondary invaders. Somewhat similar results can be achieved with hospitalization, bed-rest, diet, sitz-baths and cleanliness.

Those with stenosing lesions, without constitutional symptoms, may be kept reasonably healthy in most cases with dilatation or proctotomy. Soft or brawny lesions which are not necessarily the precursors of stricture, but remain non-stenosing over long periods of observation, present a more difficult problem. The general manifestations, such as loss of weight, prolonged fever and pronounced secondary anemia, give rise to much incapacity and chronic invalidism. Colostomy, although attended by some improvement in these cases, does not prevent further invasion. In these circumstances, radical excision has been resorted to. Of 16 excisions performed in three hospitals in Baltimore over the past two and one-half years by the Lockhart-Mummery technic with few modifications, 13 have survived

operation. The lesions in 10 of these are known to have been removed beyond the level of apparent involvement. Eight have completely healed and are rehabilitated, while 2 operated upon five weeks ago are convalescing satisfactorily and healing uniformly. Three incomplete excisions, although improved, still have residual perineal fistulae of small size but with slight persistent drainage. Of the 3 operative fatalities, 2 succumbed to peritonitis, the remaining 1 to septic meningitis found at autopsy to be the result of a direct communication between the meninges and the base of a bed sore on the dorsum of the sacrum. All were poor surgical risks.

It is not pretended that this is the ultimate in the treatment of rectal lymphogranuloma. Surgical methods will be superseded by some form of medicinal therapy, the efficacy of which should be based upon most or all of the following criteria:

##### Local:

1. Diminution of discharge.
2. Relief of discomfort.
3. Cessation of bleeding if this is a prominent feature.
4. Healing of perineal ulceration.
5. Proctoscopic evidence of diminution of swelling; healing of mucosal ulceration.
6. Roentgenologic evidence of arrest of bowel involvement at the level when first examined.

##### General:

1. Arrest of weight loss.
2. Cessation of fever.
3. Improvement in the blood picture.



## MANAGEMENT OF THE THIRD STAGE OF LABOR\*

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The third stage of labor is that phase which begins immediately after the birth of the baby and ends with complete expulsion of the placenta and its membranes. From the maternal standpoint it is the most serious and hazardous stage of labor, yet the one which is not given its warranted amount of attention by many who practice and teach obstetrics.

The management of most medical, surgical and other obstetrical conditions is quite variable. Until recently the management of third stage labor has been quite routine. Now, even third stage management is variable to a point where the student, intern or practitioner who lacks considerable experience in obstetrics is in a quandary.

The history of obstetrics demonstrates that through several cycles of so-called conservative and radical obstetrics there is accomplished with each cycle some degree of advance in knowledge and technic. In the past four years, after noble efforts by private and commercial research, obstetrics has been blessed with a drug which has been clinically tested and proved to possess a strong oxytocic activity.

Now more than ever before, with our so-called painless labors, analgesias, anesthetics, operative obstetrics, perineotomies, prophylactic forceps and what appears to many of the older practitioners to be a "three-ring circus" of radical ideas, all of which increase the hazardous possibilities, we are in need of potent oxytocics.

The usual, tried, safe and conservative method of handling the third stage of labor required that immediately after the birth of the baby the obstetrician or an assistant control the uterus by sinking the palmar surface of the hand into the abdomen between the umbilicus and the symphysis pubis until contact is made with the fundus. Massage is only necessary if the outline of the fundus is indistinct or soft and filling with blood. Vigorous massage then stimulates contraction of the uterus, hastens

complete separation of the placenta and prevents undue loss of blood. Contact should be kept with the fundus until the signs of separation present themselves. These are: first, a bright red trickle of blood; second, a rising of the fundus above the position it has occupied; and third, the prolongation of the extra vulvar umbilical cord. These changes signify bleeding from behind the placenta and distention of the lower uterine segment or upper portion of the vagina by the placenta. This separation is completed normally 15 to 20 minutes after the birth of the baby. As soon as separation has taken place, the fundus should be massaged until it contracts into a firm, hard, globular mass, after which it is grasped between the thumb anteriorly and forefinger posteriorly and pressure exerted downward in the axis of the pelvis, the uterus being used as a piston to shove the placenta out of the vagina.

When the placenta appears at the vulva, it should be grasped with the free hand and lifted upward. This maneuver seems to separate the membranes more evenly and if not executed too swiftly prevents their tearing. Some prefer to twist the membranes into a cord and slowly extract them. If the membranes should tear, the extra vulvar portion may be clamped with forceps and twisted; the remnants can usually be delivered by gentle traction, but if not they should be allowed to remain, instead of the vagina or uterus being invaded in attempting to remove them. Remaining portions will be cast off with the lochia. As soon as the uterus is empty any of the accepted oxytocics can be given freely to keep the uterus contracted. These oxytocics vary from fluid extract of ergot to the most refined alkaloids of ergot's oxytocic principles, but pituitrin is probably most commonly used.

If separation of the placenta has not taken place after 30 minutes from the birth of the baby, Credé's method to hasten contraction and separation may be employed. This consists in kneading the fundus vigorously, irritating the

\* Read before the Society, December 14, 1938.

uterus to contract. It is well to remember that an empty bladder facilitates expulsion of the placenta.

The foregoing has been a short summary of the management under normal conditions. Nowadays, contrary to what most of us were taught, oxytocic drugs are given before the uterus is empty by many well-known obstetricians. Pituitrin in doses of 1 c.c. given intramuscularly immediately after the birth of the baby has been found to have in hospital practice a beneficial reduction of the separation time with marked lessening of blood loss, the separation time being reduced to an average of 8 to 10 minutes. Many of the conditions which tend to lessen the contractile powers or actually produce atony of the uterus, such as twin pregnancies, hydramnios, prolonged labors and shocking operative deliveries all respond favorably to pituitrin stimulation.

The good results following the use of pituitrin have encouraged the use of even more potent oxytocics, given by methods which elicit even swifter action. I am referring to the salts of the water soluble ergot, alkaloid or ergonovine isolated in 1934 and on the market in a host of proprietaries, common among which are Ergotrate, Basergin and Ergometrine.

The drug is administered intravenously in doses of 0.2 mg. Given immediately after completion of the second stage, in most cases it evokes a characteristic tetanic contraction of the uterus within 20 to 40 seconds which separates the placenta in 1 to 3 minutes and lasts 2 to 4 hours. Its freedom from undesirable effects increases its value. Since it has no effect on blood pressure, it may be used judiciously in toxic cases.

When ergonovine was first used, in what might be termed so radical a method, many were discouraged because they believed it increased the incidence of retained placenta by creating a contraction zone at the lower uterine segment which incarcerated the separated placenta. Ergonovine should be used intravenously only in hospital cases, and since most of these are under various degrees of anesthesia and are unable to bear down when the uterine contrac-

tion occurs, it is necessary for the obstetrician or an assistant to determine the time of separation and express the placenta immediately; otherwise the separated placenta may be enveloped above the closed cervix and the interference with expulsion eventuate in a post-partum hemorrhage.

Surprisingly enough, when ergonovine is used intravenously separation occurs usually before 3 minutes have elapsed, so that close observation must be stressed and prompt expulsion of the separated placenta executed.

I have had the opportunity to observe the action of ergonovine in over 900 labor cases in which the drug was administered intravenously after the delivery of the baby. Of these only 11 cases offered any degree of difficulty in removal of the placenta because of the contraction zone of the lower uterine segment or closed cervix. Three of these cases necessitated manual removal of the separated placenta from the uterus. The remaining 8 were expressed after vigorous pressure on the fundus. None of the cases that gave trouble had the placenta expressed as soon as it had separated. In most cases perineorrhaphy was done before attempting to deliver the placenta. Only 6 cases did not respond to ergonovine as far as uterine tone and contraction are concerned, 4 of which responded to other oxytocics, 1 of which responded to packing and 1 of which terminated fatally after all available attempts at control had failed. The dramatically swift action in completely separating the placenta, the small amount of bleeding, and the firm contraction of the uteri in all of the remaining cases under my observation have made ergonovine and its intravenous administration my choice as a safe and reliable method in treating the placental stage of labor.

By 1936 Davis and Adair in Chicago had observed the action of ergonovine in 20 labors complicated by severe post-partum hemorrhages, and in all cases reported spectacular action on the part of the oxytocic agent. The use of ergonovine and the expression of the placenta within 2 minutes after injection with no unusual bleeding, in a case I had previously seen to have a severe post-partum hemorrhage with each of



her two previous labors, may have been coincidental, but to me was most impressive and convincing.

The necessity of palpating the uterus to rule out the possibility of another baby before the injection of ergonovine is apparent. The violent contraction following the use of the oxytocic might rupture the uterus or at least render delivery of the baby very difficult if any abnormal position existed.

Whether allowing the normal physiologic process to take place or using oxytocics before the uterus is empty, if after a period of 2 hours repeated attempts at expression by Credé's method and prolonged efforts have been of no avail in delivery of the afterbirth, the condition should be considered one of abnormal adherence or anomaly of the placenta.

In the absence of any emergency, such as hemorrhage, it is safe for those less familiar with obstetrics to wait for several hours, or better still to call for special consultation, than to attempt manual removal. Manual removal of the placenta is the most dangerous of all obstetrical operations. The hand which must pass through the unsterile vagina comes in direct contact with the thrombosed sinuses of the uterine wall. The danger of infection is manifest.

Although I do not intend to recount in detail the treatment of every complication of the third stage, I feel that a short description of manual removal of retained placenta will be beneficial because of the possibility of hemorrhage which demands action.

The danger of manual removal of the placenta cannot be overemphasized; the aseptic technic cannot be too scrupulous. Anesthesia must be moderately deep. The patient's general condition must be at least fair. The right hand enters the vagina following the cord through the cervix until the placenta is felt. With the left hand controlling the fundus through the abdominal wall, the right hand seeks the edge of the placenta. The fingers are gently inserted between the placenta and uterine wall. A slow deliberate peeling motion is made from the uterine wall toward the placenta, following the line of cleavage until the placenta lies free in

the uterine cavity. The great danger of perforation of the uterus where the placenta is tightly adherent demands caution. Packing, oxytocics, infusions, transfusions and shock treatment are usually necessary following manual removal.

If a definite line of cleavage is not felt when attempting manual removal, the operation should be discontinued. Undoubtedly the condition is that of placenta accreta. These cases should be prepared for hysterectomy, since removal of the placenta is impossible.

Post-partum hemorrhage and inversion of the uterus are mentioned not because they occur in the third stage but because of their relation to mismanagement of third stage. Hemorrhage is due to atony of the uterus, extensive tears and retained portions of placenta. Strong oxytocics and uterine packing, repair of the tears or removal of retained portions of the placenta usually control the hemorrhage, but the rapidity of onset, the magnitude and quick development of serious symptoms often overwhelm the obstetrician.

Inversion of the uterus may be spontaneous, may follow too vigorous attempts at expression of the placenta, or may be brought about by traction on the cord before separation is complete. Deep anesthesia, pressure on the fundus, trauma to the soft parts such as laceration of the cervix, all tend to increase the incidence of inversion of the uterus. An inverted uterus should be replaced and packed as soon as the patient's condition permits.

As soon as the placenta is delivered, it should be examined closely for absence of cotyledons or succenturiate lobes. The afterbirth is spread out on a flat surface with the maternal side exposed. Normally the lobes fit accurately together as pressure is made on the periphery toward the center. When pieces of placenta are missing, this accurate apposition is not accomplished. After the maternal surface of the placenta has been examined, it should be turned over for examination of the fetal surface. Defects in the chorion and amnion suggest the absence of a succenturiate lobe and its retention in the uterus.



Examination of the perineum, vaginal vault and cervix uteri may be made before or after delivery of the placenta. If lacerations are extensive, it is better to express the placenta before repair is made, thus eliminating the interference of bleeding and the possibility of damage to the repair by delivering the placenta. All of the operations should be executed with dispatch, since continued anesthesia adds to the risk of hemorrhage.

Delivery care does not end with completion of the third stage and post-partum repairs.

The attending physician should remain with the patient for at least one hour after completion of labor. In consideration of the fact that of all the risks and dangers which accompany pregnancy during gestation and the time of parturition, those occurring in the third stage and the hour thereafter are of such magnitude and develop so rapidly, it is imperative that diligent attention be given at this period to safeguard the patient and insure a happy termination to the pregnancy.

## DIPHTHERITIC INFECTION FOLLOWING TONSILLECTOMY\*

### REPORT OF A CASE

ALBERT P. TIBBETS, M.D.

*Washington*

Although the textbooks warn us of the possibility of diphtheritic infection following tonsillectomy, an extensive search of the literature and inquiries of other physicians lead me to believe that it is a rather rare occurrence. However, because of the fresh raw surface which affords an ideal culture medium and the lack of resistance to the absorption of toxins, it becomes a serious complication.

The patient, Miss M. C., 23 years of age, consulted me on August 18, 1937, complaining of frequent colds, sore throats, headaches and asthenia, which her physician attributed to infected tonsils. She had never had diphtheria nor to her knowledge been around anyone with that disease. Examination showed tonsils of moderate size, chronically inflamed and with pus in the crypts. There was also moderate enlargement of the deep superior cervical glands.

Tonsillectomy was performed at the Episcopal Hospital under general anesthesia on September 4, 1937. There was no unusual trauma and but little bleeding. Both fossae were painted with 5 per cent mercurochrome and were perfectly dry when she left the table. That evening a thin firm clot was present in the left fossa, but since there was no bleeding it was not disturbed. The following afternoon there was slight bleeding from the same fossa. The clot was removed and the oozing was readily checked by pressure. The clot reformed

and was removed two days later because the patient thought it interfered with swallowing. It differed from the usual clot in being thin, tough and very adherent, so that only a small portion could be removed at a time, leaving a raw oozing surface.

The patient was visited twice daily and did not seem to be doing at all well. She complained of marked soreness on the left side of the throat, and of difficulty in breathing and swallowing. There was considerable glandular enlargement below the jaw, with a dusky reddish discoloration of the skin over this area.

A smear taken from the fossa on the fourth day showed many spirilla but no fusiform nor Klebs-Loeffler bacilli. She was treated with sodium perborate gargle and 10 per cent neoarsphenamine in glycerine for the next 24 hours without relief, and she was beginning to show decided evidence of toxemia. The following day Dr. Selinger reported that he had found a moderate number of typical diphtheria bacilli in the culture. The clot now assumed the appearance of a grayish membrane extending above the fossa and down towards the larynx. She was immediately given 20,000 units of diphtheria antitoxin and returned to her home in Virginia. The following day there was a decided improvement both in the appearance of her throat and in her general condition. The dose of 20,000 units of antitoxin was repeated and from that time on improvement was rapid. Except for an attack of serum sickness on the tenth day, she made an uneventful recovery.

This gradual change from a postoperative blood clot to a typical diphtheritic membrane was something new in my experience and one that caused considerable anxiety until the cause was determined and antitoxin administered.

\* Read before the Section on Ophthalmology and Otolaryngology of the Society, November 18, 1938.

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### THE PRESIDENT'S MESSAGE

#### A FABLE OF AMOEBA PROTEUS

In primordial days there lived a creature named Amoeba. His home was in a murky, tepid fluid and he reacted as-a-whole to his environment.

In form he was rotund and globular when at rest. The structure of his substance being hardly differentiated, he had no special organs for selective function.

On the contrary, in the presence of the desirable he became all oral stoma and ingested the thing. If, perchance, it was noxious but did not immediately cause disintegration, he then became all cloaca and extruded the unassimilable with vigor and emphasis. When angry, he was mad from center to periphery.

When he found himself on a spot that was hot, he immediately became all feet—pseudopodia—and would go to other places. But as his feet were multiple and his aims at any one time, diverse, there was more agitation than progression.

Even on arriving at other places, he did nothing, unless under certain irritating circumstances, and then he divided and became two, each of which, in turn, behaved after the manner of all created amoebae.

After cycles of aeons, Amoeba felt the breath of Brahm, knew desire, and made petition for a name and identity.

Quoth Brahm: "Thou art Amoeba, and I name thee Proteus."

"And what doth that signify, O Interpreter?"

Brahm answered: "Change."

"And what is that to me, O thou Unchanging-Absolute?"

"My Law of Giving, and Your Hope of Becoming," answered Brahm.

"What, then, shall I become, O Origin of Purpose?"

"Homo Sapiens."

"And what-like, then, shall I be, O Fore-knowing One?"

"Thou shalt wax in size and change in form, till thou hast two Ears, to hear Both Sides of a Question, and two Eyes, to see in Perspective; on Legs shalt thou go in search of habitat, and with Hands shalt thou build the House of Thy Desire."

"Shall I then know rest, O Thou Determiner of Things to Come?"

"Nay. Not so. It shall come to pass that in making thy house thou thyself shalt evermore be so changed anew that thou shalt not fit into it, nor yet be at ease in Occupancy."

"Shall there, then, be no contentment, nor peace for me and my progeny, O Master of Conditions?"

"Yea, verily, in work mayest thou find contentment, O Proteus, and for brief seasons in brooding on that Work and my Law, shalt thou find Peace."

"How and when shall I know that I have become altogether and verily Homo Sapiens, O Source of Fulfillment?"

"Thus, O Proteus: From time to time, Panic and Passion shall visit thee and test thee, and when thou canst bridle and curb Panic and withhold Passion in dealing with my creatures, then, O Proteus, shalt thou know that thou art altogether and verily Homo Sapiens."

"And, then, what shall I do, O Dispenser of Labor and Abiding Hope?"

"Then, and not until then, again enter The Presence."

So Brahm reposed and Proteus entered upon his continuing Labor of Change.

At times he believes that he is verily Homo Sapiens, but when visited and tested by Panic

and Passion, he can neither bridle and curb the one, nor yet withhold the other.

So he recalls his ancestry and knows that he is not yet altogether and verily *Homo Sapiens*, and so must continue his Labor of Becoming; nor can he yet reënter The Presence or enjoy Felicity.

WILLIAM J. MALLORY, M.D.

## MAY FIRST—CHILD HEALTH DAY

SLOGAN: *The health of the child is the power of the nation*

May first, May Day, has by Congressional Resolution been set aside as Child Health Day. The objective of this Resolution was to bring to the attention of each community the importance to the child's health, development, and well-being throughout life of proper food, rest, exercise, medical care, and protection against disease; the ways of informing parents and others how child health may be safeguarded; and the means whereby such safeguards may be made available to all children.

This is in particular an opportunity for the well qualified and well trained physician by use of his scientific knowledge, his wide experience, and his intimate contact to offset information which consists of partial truths and which may be colored with selfish interests. Undoubtedly it is only through the physician, and him alone, that this information can be imparted with simplicity and clarity to the average parent in order to produce the proper results. The more important factors in the health of the child have to do with the instituting of necessary prophylactic measures for the prevention of diseases. Particularly in our hands is the dissemination of information regarding the values and limitations of the various inoculations in preventing or modifying the infectious or communicable diseases. Instruction in the sensible care of the infant is also our responsibility. Proper advice to young parents regarding fads which are constantly being offered to them by otherwise acceptable means of information may be given. It is to us as physicians that parents

look to for an evaluation of the various educational methods in directing the growing impressionable girl or boy. The guiding of the child in developing initiative often requires our advice regarding the best methods of handling behavior problems.

We as physicians should take advantage of this time to coöperate with the Government agencies in using this day, particularly set aside, to make the public Child Health Conscious. The government through its Children's Bureau has organized a National Campaign to increase safeguards to the health of the child, and in so doing is helping us by an extensively organized advertising campaign. We therefore should make concerted efforts to aid in the dissemination and interpretation of this campaign and to the best of our individual abilities work for its success. This mutual coöperation, freely given, will be to the material health advantage of our friends, the children.

May First—Child Health Day.

Wm. F. O'D.

## ALL EYES ARE ON WASHINGTON

More importance attaches to what goes on in Washington today than at any previous time in its history. Government activity, as never before, touches the lives of all citizens, whether they be engaged in business, agriculture, a trade, or a profession.

With the deepening of the depression, sweeping social legislation, much of it of an experimental nature, has been enacted. As a result business has suffered the jitters, labor has been engaged in a disastrous conflict within its own ranks, and the unemployed, of whom there are still many millions, clamor for more aid. Small wonder that the medical profession finds itself involved in serious difficulties. To enumerate them all would be a long and sad story, and mention of only a few will suffice.

Unreasoning criticism of the medical profession has been frequent in recent years and legislative proposals of regulatory nature numerous. Very recently the so-called National



Health Bill was introduced. If it becomes a law, it will have a tremendous effect upon the practice of medicine in this country. What is of more serious moment to physicians at the present time is the prosecution of the medical profession, as represented by the American Medical Association, the Medical Society of the District of Columbia, and individual physicians, by the Department of Justice for the alleged violation of the Sherman Anti-Trust Laws. So it is not surprising that the eyes of the medical world are turning toward Washington where it is quite evident that medical history is in the making.

In view of this situation it is particularly appropriate that the Society's Annual Scientific Assembly should this year be the most ambitious it has undertaken. Unusual conditions existing here would, of course, in themselves, not justify the effort which is being made to attract the profession to Washington from nearby states. An exceptional program, however, is to be offered. The committee in charge is presenting for the first time a postgraduate course in gastroenterology. As many specialties touch on this branch of medicine, a varied program is promised. The most recent advances in the diagnosis and treatment of gastrointestinal diseases will be presented, every effort having been made to obtain, in addition to able members of the local profession, outstanding physicians in various fields from well-known medical centers.

Recognizing that physicians do not attend meetings only to be enlightened, ample entertainment is to be provided. There will, of course, be the usual banquet and luncheon, also a stag smoker, and luncheons given by local medical schools for their alumni. Speakers and entertainers will be on hand for these occasions. Mr. Constantine Brown, nationally known foreign correspondent, has been obtained for the Society luncheon. On the occasion of the public meeting, the principal speaker will be Dr. James C. Sargent, past president of the State Medical Society of Wisconsin and Clinical Professor of Urology of Marquette University School of Medicine. Dr. Sargent is one of the

best informed physicians in this country on social problems in their relation to medicine.

The Woman's Auxiliary will also do its share of entertaining, and is planning a luncheon for wives of visiting doctors. The District Women's Medical Society is planning a dinner for visiting women doctors.

Taking advantage of ample space provided at the Mayflower Hotel, the committee in charge of exhibits has made its plans accordingly. Some twenty scientific exhibits are planned and thirty firms have contracted for space in the technical exhibit.

This brief résumé of what is in store for physicians who participate in the 1939 Assembly should be ample assurance that the meeting will not only be well worth while from the standpoint of the scientific program, but also an enjoyable occasion with plenty of entertainment and an opportunity to renew old acquaintanceships.

#### CAN "MEDICINE" BE MECHANIZED?

The practice of medicine is a personal service. It cannot be mechanized. No matter how much laboratory work may be done, the fundamental service is that rendered by the physician in taking the history, examining the patient, determining what laboratory tests are necessary, and putting all of the data together to make the diagnosis. Not infrequently, repeated examinations and prolonged observations are necessary also. One often hears the expression "health is purchasable," as if by putting so much money into a slot machine one could receive a certain product "health." Of course, to a certain extent the expression is correct, but the expression itself is too cold and impersonal. How often is the public misled into thinking that laboratory equipment is the important thing in medicine! But how tremendously important is the efficiency of the technician who uses the apparatus, and how vital is proper interpretation of the results of the tests.

There is a limit to the amount of medical work a man can do well. He can at best "work up" not more than four new cases and see a

few old patients in a working day. This fact alone exposes the fallacy of the "medical mill" that systems of health insurance and medical coöperatives depend upon for their existence. The more rapid the turnover and the more impersonal the service, the less valuable is the individual piece of work. There is no substitute, and never will be, for the individual painstaking service that characterizes the best type of medical practice of today. The public must be made to realize this for its own good.

### PERTINENT PARAGRAPHS

It is difficult for people to retain their perspective these days. Particularly is this true in the Nation's Capital, where proximity to affairs of state often creates a distorted viewpoint. This is undoubtedly due to the pressure applied by officials, groups, and individuals in an effort to attain their objectives. The effect of this on the people in Washington is at times not happy.

We must not lose sight of the fact, however, that while Washington is the seat of the National Government, the power which directs it emanates from all parts of the country. This is something physicians should remember where health legislation is concerned. In the final analysis, the people of the states will determine whether the changes now being proposed are acceptable.

Attendance at the Society's business meetings has increased. This is encouraging, but not sufficiently so to warrant elation. At least half the active membership should be on hand for these sessions, since matters of vital importance to every practitioner in the District are often under consideration.

Members of the Society have no complaint if they are not on hand to express their views and register their vote when action is taken with which they are not in agreement. The Society is a democratic organization in the conduct of which every active and life member has a voice.

The radio is a potent medium through which to disseminate health information. For several years the Society has taken full advantage of it. How many of these radio programs have you heard?

May we suggest if you have not done so that you listen in on broadcasts over WMAL at 10:45 a.m. on the following dates:

March 22: Blood Pressure in Relation to Heart Disease  
March 29: An Interview with Dr. Arthur E. Hertzler

The Society's Committee on Public Relations would like to have your reaction to these programs.

Every editor would like to know how many readers he has. The editor of the *MEDICAL ANNALS* is no exception. In the near future a canvass will be made of the Society membership not only to determine the extent to which the *Annals* is read, but the features best liked, and those which in the opinion of the profession might well be included. This has been done elsewhere with beneficial results. It has sometimes brought forth unexpected and severe criticism, but usually the constructive suggestions made have been much worthwhile.

It is perhaps unnecessary to remind members that the new Constitution and By-laws was incorporated as an insert in the February issue of the *MEDICAL ANNALS*. However, there is more than a remote possibility that some member will read this who had not observed the insert. It should be removed and filed for reference in the physician's files.

The Constitution and By-laws will be published in pamphlet form in the near future.

As this is written, nearly 600 physicians have signed agreements to participate in the Mutual Health Service. This response is exceptional to say the least and is evidence that Society members intend to lend their wholehearted cooperation in this project.

Steps are being taken to inaugurate the Service at the earliest possible moment. An organization meeting will have been held before this item appears for the purpose of adopting a Constitution and By-laws and electing a Board of Trustees. Following this meeting an administrator will be employed. He will have an arduous task doing the necessary work preliminary to actual operation.

As the Service approaches realization the magnitude of the undertaking becomes more apparent. This fact and the experimental nature of the project has been emphasized by the Executive Board in several of its recent reports. However, all indications point to the fact that the Society desires that the Service be given every opportunity to succeed and will lend its generous support.

Many favorable comments have been heard in connection with making available at business meetings mimeographed copies of all reports. Members who find it impossible to attend meetings can obtain copies by calling the Society's office. This is the only method by which members can inform themselves fully in regard to the Society's activities.

A public address system has now been installed in the auditorium of the Society's building. There should be no further complaint that speakers cannot be heard.

#### TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The regular meeting of the Washington Society of Pathologists was called to order by Dr. Janvier W. Lindsay, President, at 1:40 p.m., Saturday, January 7, 1939. There were 27 members and guests present. Captain Kenneth F. Ernst of the Army Medical Center was introduced by Captain Elbert DeCoursey. Dr. S. B. Prevo was introduced by Dr. R. M. Choisser and nominated for Associate membership.

#### *Presentation of Cases*

**Dr. Henry Wollenweber** presented 25 microscopic slides (S-848) of actinomycosis. Nine months before biopsy, the patient had a gradual swelling of the left testicle with drainage of pus for about a week. One month later, while lifting a stone slab, the sinus again broke open and has been draining ever since. Eight months after the onset the pubic region quickly swelled, opened and began draining. At the time of biopsy he had multiple sinuses in the scrotum, perineum, and the suprapubic region. The pathologic examination revealed a granulomatous inflammation, often around colonies of actinomycetes. Culture of the sinuses also was positive for actinomycetes.

**Dr. Thomas W. Peery** presented 25 slides from a case of nodular hepatic arteritis. The patient was a 53-year-old white woman with a history of hypertension for about 6 years. A ringing of the ears and an occasional occipital headache and dyspnea on exertion have been progressively worse during the last 4 years. One year ago a mass was palpated in the abdomen and thought to be a fibromyoma of the uterus. The blood Wassermann and Kahn reactions at this time were strongly positive. There was nitrogen retention in the blood, markedly decreased kidney function but no edema. She died in coma. At the autopsy the kidneys showed arteriolar sclerosis and the mass in the abdomen proved to be bilateral cystadenoma of the ovary. The liver weighed 2000 gm. Along the hepatic artery there were nodular swellings. Microscopic sections of the liver showed focal necrotizing lesions with surrounding inflammatory cell infiltration. There was syphilitic aortitis.

In the discussion the diagnosis of periarteritis nodosa was suggested. Two members thought that the etiology probably was syphilitic. One member thought the history was too acute for periarteritis nodosa.

**Lt. Col. J. E. Ash** presented 25 slides from a case of nasal polyp of rhinosporidiosis from a 16-year-old white boy who has lived in Oklahoma and Texas and suffered from right-sided nosebleed for 4 months. On examination there was found a lobulated polypoid mass attached to the anterior superior part of the right side of the nasal septum.

In the discussion Dr. Ragle reported that he had seen a similar lesion in a middle-aged sailor on the West Coast. It was noted that only 7 cases with rhinosporidiosis of the nares and no cases of the conjunctiva have been reported in the United States, and that in the files of the Army Medical Museum there are unreported 3 nasal lesions and 2 conjunctival.

**Dr. Walter Freeman** presented 25 slides of a cerebellar hemangioblastoma in the case of a 5-year-old white boy who, following a cold 8 months ago, developed unsteadiness on walking. The only previous medical history had been irradiation therapy of a facial hemangioma. During the summer he had whooping-cough and was unable to keep up with other children. In the fall the left arm and left leg were noted to be clumsy and there was increased fatigability. Although there was no history of headache, vomiting or visual dis-



turbances, examination revealed choked disc, ataxia of the left hand, walking on a broad base. Percussion of the skull gave a cracked-pot sound. X-ray films showed a separation of the sutures, and the diagnosis of cerebellar tumor was made. At operation a rather large cyst was found in the left cerebellar lobe from which 20 c.c. of yellowish fluid was obtained that immediately clotted after its removal. A pink gelatinous nodule, about 1 cm. in diameter, appeared on the wall of the cyst. The patient made an uneventful recovery. Microscopic examination of the mural nodule presented cavities lined with flat endothelial cells and a dense abundant stroma containing very few glial fibers and composed mostly of connective tissue.

In the discussion it was revealed that a retinal hemangioma was not found. The importance of the differentiation from an astrocytoma on pathologic examination was stressed.

**Captain R. M. Thompson** presented 25 slides of a liver in a case of schistosomiasis and malaria in a 51-year-old Filipino who complained of fever, periodic chills and general weakness. Blood films were positive for estivoautumnal malarial parasites. Following the use of quinine sulphate and atabrine the man became violently insane. Thirteen days later he suddenly collapsed and died. Microscopically the liver and spleen showed the typical picture of estivoautumnal malaria. Sections of brain were negative. The outstanding finding was numerous schistosome ova in the periportal arteries of the liver. None were found in the brain.

In the discussion it was noted that the parasites were probably *Schistosoma japonicum* rather than *S. mansoni*, since only 1 indefinite lateral spine was demonstrated.

**Dr. Oscar B. Hunter** presented 25 slides from a superficial tumor of the sternocleidomastoid muscle in the case (86414) of a 54-year-old white woman who several years ago had a thyroidectomy. Three months ago pain and a small lump appeared in the left end of the scar of the goiter incision. This was excised and found to be closely adherent to the anterior surface of the sternomastoid muscle about 3 cm. above the clavicle. Microscopic examination of the tumor nodule revealed an abundance of large cells whose cytoplasm contained eosinophilic granules negative to fat stains. These cells were arranged in groups and strands. There were also closely packed bundles and whorls of spindle cells.

In the discussion fibromyoneuroma and myoblastoma were suggested as diagnoses.

**Dr. Hunter** also reviewed the case of suspected lymphoblastoma, the tissue of which had been presented before the Society last year. About a year ago swollen cervical lymph-nodes appeared. There has been no fever at any time. Excised lymph-nodes have suggested Hodgkin's disease, chronic nonspecific inflammation and lymphoblastoma to various examiners. After several treatments with X-rays and injections of sodium iodide the patient has not lost weight or decreased his usual activities. The case was presented in the light of the recent suggestion by Parsons and Poston that the Brucellosis type of organisms may be the etiologic agent of certain lymphadenopathies now diagnosed as Hodgkin's disease.

**Dr. T. L. Perrin** presented slides of an unusual type of adenocarcinoma of the prostate.

The meeting adjourned at 3:45 p.m.

## SENATOR WAGNER COMMENTS ON THE NATIONAL HEALTH BILL

Senator Robert F. Wagner of New York recently introduced in the Senate the National Health Bill of 1939, and issued the following statement:

"The national health bill which I have just introduced in the Senate is the culmination of five years of intensive Federal study and investigation concerning the health problems of the Nation.

### HISTORY OF FEDERAL ACTION

"Studies looking toward a national health program were first made by the Committee on Economic Security appointed by President Roosevelt in June, 1934. As an essential beginning, the Committee recommended, and Congress adopted in Titles V and VI of the Social Security Act, a nation-wide preventive health program, including general public health work, child and maternity care, and personnel training and investigations. In August 1935, promptly after the passage of the Act, the President appointed by Executive Order an Interdepartmental Committee to Coordinate Health and Welfare Activities, composed of representatives of the

departments of the Federal Government concerned with health and welfare problems. In addition to its work in coordinating and adjusting the health functions of the Government under existing law, the Committee, beginning in 1937, had available to it the accumulating results of health studies by the Social Security Board, and the Children's Bureau, as well as the data compiled in the comprehensive National Health Survey conducted by the Public Health Service.

"The results of these studies, together with a suggested program of action, were embodied in the report of the Technical Committee on Medical Care, a subcommittee of the Interdepartmental Committee, and submitted to the National Health Conference called by the President in July of 1938. At this Conference, participated in by individuals and organizations representing a cross-section of American opinion, lay and professional, overwhelming sentiment was disclosed for the broad-gauged plan laid down by the Technical Committee. In January of this year, the President transmitted a special message to the Congress, submitting for its study and consideration a national health program recommended by the Interdepartmental Committee,

based on the results of the Conference and subsequent conferences and deliberations.

#### PROVISIONS OF THE BILL

"The National Health Bill puts in the form of concrete legislation the recommendations for action which have developed out of this five-year period of careful and expert inquiry. The bill utilizes the sound procedure of grants-in-aid developed in various titles of the Social Security Act, which gives the greatest latitude to the States in the development of their own plans consistent with the needs of their own people. Grants are made available for the purpose of establishing, expanding and improving State programs for (1) child and maternal health; (2) general public health services and investigations; (3) construction of needed hospitals and health centers; (4) general programs of medical care; and (5) insurance against loss of wages during periods of temporary disability. Federal administration is vested in existing agencies—the Children's Bureau, the Public Health Service and the Social Security Board.

"The fullest development of this program would bring the benefits of modern medical science, both preventive and curative, within the reach of all groups of the population, especially in rural areas and areas suffering from economic distress.

"Under no circumstances will the Federal Government undertake to furnish medical care. Administration in all cases will be through the States, which will develop their plans only after careful surveys of local needs and conditions, and with a view to supplementing, not displacing, the existing efforts of the professions, the localities, charitable organizations and the hospitals.

"It should be clearly understood that the bill does not establish a system of health insurance, or require the States to do so. Specifically, under Title XIII of the bill, dealing with general program of medical care, the States will be free to develop plans of their own choosing, subject to necessary basic standards. Such plans may be limited to those on relief or include others more fortunately situated in the economic scale. The plans may be supported by insurance contributions, by general revenue, or both. The method and scope of medical services are likewise for the States to determine, and may include services rendered through existing private agencies or institutions. Here, as under other titles of the bill, State plans would be projected only after careful surveys of State needs by the duly constituted State agency.

#### PROFESSIONAL GUIDANCE AND STANDARDS

"The bill does not interfere with the States in the licensing of medical or other practitioners. It seeks to maintain and improve the high professional standards of medical and institutional care already achieved in the United States. All State plans under the respective

titles must provide methods of administration to this end. At every stage of State and Federal administration, including the formulation as well as the effectuation of State plans, provision is made for consultation with professional advisory councils, composed of members of the professions and agencies, public and private, that furnish the particular services, and other persons informed on the need for, or provision of, such services. In addition, Federal grants are available in the respective titles of the bill for the proper training of administrative and technical personnel, and the States are required to establish and maintain personnel standards on a merit basis. Finally, to insure effective coördination of all phases of the program, State plans must provide for necessary working agreements between the State administrative agency and other agencies administering related services, including such functions as social insurance, public assistance, workmen's compensation, vocational rehabilitation, industrial hygiene, and education.

"By these and other methods, carefully elaborated in the bill, the legislation would insure the highest administrative and technical efficiency ever projected in a program of this kind.

#### APPROPRIATIONS

"The new appropriations authorized in the first year for all phases of the program, including administrative costs, aggregate approximately 80 million dollars, exclusive of amounts which may be appropriated in the discretion of Congress for aiding the States in the construction of needed tuberculosis and mental hospitals. This sum will be gradually increased over a ten-year period, and will be available to match sums appropriated by the States toward the cost of their respective programs. No new Federal payroll taxes are authorized.

"In order to make the available funds serve the interest of those localities and States which are in greatest need of the services, the bill authorizes grants on a variable matching basis, depending on the relative financial resources of the several States, as determined by the per capita income of their inhabitants. For the various programs of public health service and hospital construction, the authorized Federal grants will vary from 33½ per cent to 66⅔ per cent of the total sums expended by the States; for general programs of medical care, the matching ratio varies from 16⅔ per cent to 50 per cent of total State expenditures. In this way, the bill will raise the general level of health protection throughout the country, while reducing the existing wide variations among the States, and especially as between rural and urban areas.

#### DISABILITY INSURANCE

"In addition to various preventive and curative health services, the bill authorizes grants-in-aid to States in



establishing insurance plans, providing cash benefits during periods of temporary disability. These insurance systems would protect the American wage earner against an annual wage loss through disabling illness amounting to over one billion dollars a year. Systematic insurance payments will maintain the worker's income at precisely the times when he needs that income most.

"Federal grants for this purpose are authorized on a fixed matching ratio—33½ per cent of the total expenditures by the States under approved disability insurance plans. The bill provides, however, that such grants shall not be made unless the State has in operation approved plans affording reasonably adequate medical services to minimize disability among those covered by the cash benefit disability plan.

#### CONCLUSION

"No social legislation projected in our time is more closely related to the general welfare than a national program of health protection. No legislation makes as wide an appeal to the public conscience and to the dictates of sound economy. No legislation was launched with more widespread approval among persons in every walk of life. We must take action now to conquer this last remaining frontier of social security in America."

#### NOMINATIONS FOR ELECTIVE OFFICES

Pursuant to Chapter VI, Article II, of the Constitution and By-laws of the Society, the following nominations were made for elective offices at the business meeting held on March 1, 1939:

|                                                               |                    |
|---------------------------------------------------------------|--------------------|
| <i>For President-elect</i>                                    | Daniel L. Borden   |
| <i>For First Vice President</i>                               | John J. Shugrue    |
| <i>For Second Vice President</i>                              | Coursen B. Conklin |
| <i>*For Member of Executive Board</i>                         | Joseph Horgan      |
|                                                               | William J. Mallory |
| <i>*For Delegate to American Medical Association</i>          | R. Arthur Hooe     |
| <i>For Alternate Delegate to American Medical Association</i> | Henry C. Macatee   |
|                                                               | Arthur C. Christie |
| <i>For Board of Censors</i>                                   | Jerome F. Crowley  |
| (Three to be elected)                                         | Walter Freeman     |
|                                                               | William B. Marbury |
|                                                               | Earl R. Templeton  |
|                                                               | Prentiss Willson   |

Elections to the above offices will be held at the annual business meeting, May 3, 1939.

\* One to be elected.

#### MEMBERSHIP

The following were duly elected to membership at the business meeting March 1, 1939:

#### Active Members

Robert S. Coffey, 1150 Connecticut Ave.  
Abe M. Cohen, 5500 8th St., N.W.  
Philip Augustus Degnan, 816 Maryland Ave., N.E.  
Edward Thomas Gary, 329 East Capitol St.  
Bernard J. Gurwin, 900 17th St., N.W.  
William Allen Howard, 2222 Que St., N.W.  
Naomi Marilyn Kanof, 1150 Connecticut Ave.  
Frederic Augustin Moretti, 118 16th St., N.W.  
Ernest James Parent, 1026 Monroe St., N.E.  
James Howell Peacock, Jr., 3547 Chesapeake St., N.W.  
Aaron S. Schwartzman, 1620 16th St., N.W.  
Richard F. Shaw, 1324 Michigan Ave., N.E.  
Roy A. Thornley, 1801 Eye St., N.W.

#### Associate Members

William Landon Brent, Glenn Dale Sanatorium, Md.  
Kenneth Francis Laughlin, 8252 Georgia Ave., Silver Spring, Md.  
Thomas Martin Peery, 1335 H St., N.W.  
Harold Renaud Reed, 1812 18th St., S.E.  
John Wix Thomas, II, Saint Elizabeths Hospital

The following applicants for membership will be voted on at the business meeting April 5, 1939:

#### For Active Membership

Harold Vincent Connerty, Georgetown University—1923  
Eugene de Savitsch, University of Chicago—1935  
Frank B. C. Geibel, Jefferson Medical College—1933  
Lewis Arthur Klein, University of Rochester—1934  
Edward A. Krause, George Washington University—1927  
George Paul Lemeschewsky, George Washington University—1934  
William Fleet Luckett, George Washington University—1937  
Henry Taylor Miller, University College of Medicine, now Medical College of Virginia—1905

#### For Associate Membership

Meta Frances Haldeman, McGill University—1927  
Robert Beall Hightower, University of Virginia—1932  
Bradley Duncan Hodgkins, Georgetown University—1923  
John Hobart Judson, Medical College of Virginia—1936  
Frank Bernard Schultz, Georgetown University—1935  
Joseph Washington Stein, University of Tennessee—1934  
Harriet Elizabeth Twombly, Stanford University—1922

#### Recent changes in membership status:

##### *Reinstated to Active Membership upon payment of dues*

Austin B. Chinn

##### *Resigned*

##### *Active Member*

Victor Bell Rench

##### *Dropped, pursuant to provisions of Chapter IV, Article V, of the Constitution:*

##### *Active Member*

Claudius F. Mayer



## CALENDAR FOR COMING MEETINGS

**Wednesday, March 29:** The Washington Academy of Surgery will sponsor the following program:

"Surgery of Cardio-Toxic Goiter," Arthur E. Hertzler, M.D., Halstead, Kansas.

Dr. Hertzler, the "Horse and Buggy Doctor," has wide acclaim both by the medical profession and the general public. Wives are invited to attend this meeting.

**Wednesday, April 5:** Business meeting.

**Monday, April 10:** *Section on Gastroenterology.* The program will be devoted to "Advances in Gastroenterology during the Past Year—A Review of the Literature with Comments." The following phases will be considered:

"Allergy," Robert Sterling McGrath, M.D.

"Pathology," Oscar B. Hunter, M.D.

"X-Ray," Arthur C. Christie, M.D.

"Surgery," John Hugh Lyons, M.D.

"Medicine," William T. Gill, Jr., M.D.

**Wednesday, April 12:** Symposium on Tetanus. Warfield M. Firor, M.D., Associate Professor of Surgery, Johns Hopkins University School of Medicine, will present a paper, and recent specific prophylactic measures will be outlined by Public Health Service physicians.

**Wednesday, April 19:** Presidential Address. "Orientation," William J. Mallory, M.D.  
Buffet Luncheon.

**Tuesday, Wednesday, Thursday, April 25, 26, 27:**  
Annual Scientific Assembly.

## RADIO BROADCASTS

### *The Medical Society of the District of Columbia*

The Committee on Public Information has released the following program to be presented over Station WMAL at 10:45 a.m., each Wednesday:

*March 29:* An Interview with Dr. Arthur E. Hertzler, the "Horse and Buggy Doctor"

*April 5:* To be sponsored by the Tuberculosis Association of the District of Columbia

*April 12:* To be sponsored by the Tuberculosis Association of the District of Columbia

*April 19:* Interviews in connection with the Annual Scientific Assembly of the Medical Society

*April 26:* Interviews in connection with the Annual Scientific Assembly of the Medical Society

## NEWS AND PERSONALS

**Dr. William Thornwall Davis** was one of the guest lecturers in the Postgraduate Course in Ophthalmology given by the University of Minnesota School of Medicine in Minneapolis, January 16-21, 1939.

Dr. Davis also presented a paper on "Vertical Deviations in Convergent and Divergent Squint" before the Sectional Meeting of the American College of Surgeons in Baltimore, March 16.

**Dr. Robert Allan Bier** has been appointed by President Mallory to represent the Society on a committee, created by Dr. George C. Ruhland, Health Officer of the District, to draft regulations for obstetric wards and newborn nurseries in Washington.

**Dr. Ella Oppenheimer**, Director of the Bureau of Maternal and Child Welfare of the Health Department, was designated by Dr. Ruhland to serve as chairman of the committee.

**The Section on Neurology and Psychiatry** presented the following program on March 2:

"Application of Psychoanalytic Therapy to the Psychoses," Dexter M. Bullard, M.D.

"The Importance of Reëducational Therapy in the Recovered Psychotic Patient," Benjamin Weininger, M.D.

**Dr. Charles Stanley White** conducted an all-day surgical seminar before the York County and Adams County Medical Societies at York, Pennsylvania, February 23.

**The Five State Postgraduate Clinic of the American Dental Association** was held in Washington, March 5-9, 1939, at the Mayflower Hotel. An invitation was extended to Society members to attend the Clinic and many availed themselves of the excellent meetings.

**The Washington Medical and Surgical Society** held its regular monthly meeting February 27 at the Kennedy Warren, when Dr. John de B. Wynkoop spoke on "Hemorrhage Complicating Pregnancy."

**The George Martin Kober Medical Society** held its monthly meeting at the Columbia Country Club February 20. The essayist, Frank M. Hand, M.D., spoke on the topic, "A General Survey of the Circulatory Diseases with Special Reference to the Extremities of the Body." Otto H. Wendt, M.D., gave a case report on "Eruption of Three Sets of Superior Central Incisor Teeth."

**A Sectional Meeting of the American College of Surgeons** was held in Baltimore, Maryland, March 15, 16 and 17, 1939. This meeting included members of the College from Maryland, Virginia, West Virginia, New Jersey, Delaware, Pennsylvania, North Carolina, South Carolina, and the District of Columbia.

The American College of Physicians will hold its annual session this year in New Orleans, March 27-31. A fine program has been arranged not only for the session in New Orleans but also in other medical centers throughout the country. The College is taking more and more of an active part in the promulgation of postgraduate studies. A relatively large number of Washington physicians are entering the College as Fellows or Associates this year. Their names will be published in the next issue of the Annals.

The American Physicians' Art Association, composed of over seven hundred members in the United States, Canada, and Hawaii, will hold its Second Art Exhibit in the City Art Museum of St. Louis, May 14-20, 1939, during the annual session of the American Medical Association. Art pieces will be accepted for this art show in the following classifications: (1) oils both (a) portrait and (b) landscape; (2) water colors; (3) sculpture; (4) photographic art; (5) etchings; (6) ceramics; (7) pastels; (8) charcoal drawings; (9) bookbinding; (10) wood carving; (11) metal work (jewelry). Over 60 valuable prizes will be awarded. For details of membership in this Association and rules of the Exhibit, write to Dr. Max Thorek, Secretary, 850 Irving Park Blvd., Chicago, Ill., or to Dr. F. H. Rodewill, President, 521-536 Flood Bldg., San Francisco, Calif.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons announces that the annual **Foundation Prize** for this year will be \$100.00. Those eligible include only (1) interns, residents, or graduate students in Obstetrics, Gynecology and Abdominal Surgery, and (2) physicians (M.D. degree) who are actually practicing or teaching Obstetrics, Gynecology or Abdominal Surgery. Competing manuscripts must (1) be presented in *triplicate* under a nom de plume to the Secretary of the Association before June 1, 1939, (2) be limited to 5,000 words and such illustrations as are necessary for a clear exposition of the thesis, and (3) be typewritten (double-spaced) on one side of the sheets, with ample margins.

The successful thesis must be presented at the next annual (September) meeting of the Associa-

tion, without expense to the Association and in conformity with its regulations. For further details address Dr. James R. Bloss, Secretary, 418-11th Street, Huntington, W. Va.

The Washington Ophthalmological Society held a regular meeting at the Episcopal Eye, Ear and Throat Hospital, March 6, at which time the following papers were presented:

"Skin Lesions Around the Eye," Walter O. Teichmann, M.D.

"Muscle Tendon Transplantation for Paralysis of External Rectus," E. Leonard Goodman, M.D.

The following officers were elected to serve for the coming year:

Dr. Ernest Sheppard, President; Dr. Frank P. Costenbader, Vice President; Dr. E. Leonard Goodman, Secretary-Treasurer; Dr. L. Conner Moss, Executive Committeeman.

The Third Postgraduate Course in Ophthalmology, to be given by the George Washington University School of Medicine, April 10-15, 1939, is expected to draw eye specialists from all parts of the United States, Canada and Puerto Rico. The following guest lecturers will participate in the course:

Drs. S. Judd Beach, Portland, Maine; William L. Benedict of the Mayo Clinic, Rochester; William H. Crisp, Denver; Edward C. Ellett, Memphis, Tenn.; F. Bruce Fralik, Ann Arbor, Mich.; Everett L. Goar, Houston, Texas; John Green, St. Louis, Mo.; Allen Greenwood, Boston; Parker Heath, Detroit; P. Chalmers Jameson, Brooklyn, N. Y.; Walter B. Lancaster, Boston; Hanford McKee, Montreal, Canada; C. S. O'Brien, Iowa City, Iowa; Luther Peter, Philadelphia; A. D. Ruedemann, Cleveland, Ohio, and Georgiana Dvorak-Theobald, Oak Park, Ill.

Washington physicians participating in the course are:

Drs. William Thornwall Davis, Ernest Sheppard, and E. Leonard Goodman.

(Continued from page 72)

cat. These changes in the bladder activity on stimulation or section of sympathetic nerves must be dependent on the innervation of Bell's muscles or of the blood vessels. I am inclined at present to accept the latter hypothesis. (The normal act of micturition and the control of vesical activity by the central nervous system were also discussed.)

# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

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### SOME THOUGHTS ON THE THEORIES AND TREATMENT OF DRUG ADDICTION\*

LAWRENCE KOLB, M.D., *Assistant Surgeon General, United States Public Health Service*

The drug addict has in the past been a much misunderstood individual. He has excited a great deal of attention on the part of well-meaning people bent on saving him or saving the world from him. As a result much has been done for and to him that is socially and medically wrong. Misguided efforts have not been confined solely to medically untrained uplifters and sadistic reformers. Physicians have had a share in it. The addict has been regarded as a shiftless liar, capable of any crime, and he has been treated either as an outcast or with too much pampering by sympathetic relatives and his real needs have been neglected by society.

Much of what has been said about addicts is true, however, especially as it applies to those of the present day. He is as a rule unreliable, and he will lie in order to get drugs or the where-withal to buy them. He will often steal or commit other crimes for this purpose, but to picture him as always useless and to infer that when he is useless and unreliable some strange effect of the drug he takes is solely responsible is an error. Drug addiction is compatible with honesty and usefulness, but at the present time the user of narcotics is more than likely to be an unreliable citizen, devoting most of his time to securing an illegal supply of drugs. There

was a time in this country when many normal people became addicts through unwise medical prescribing of opiates by physicians, or through self-medication. The condition that allowed this practice has been corrected by laws and regulations, so that at present persons with normal nervous constitutions seldom become addicts, or remain addicts for any appreciable length of time. Addicts are therefore recruited from among unstable groups who have certain deficiencies that impel them to do things, including the taking of narcotics, that are not socially approved. The environment that is inseparable from addiction of the present day tends to increase delinquencies, but the direct effect of the narcotics, except in the case of marihuana and cocaine, is not to produce delinquency.

Opium is the most important addicting drug. It is the only drug that has the property of producing a high degree of tolerance along with a necessity for continued use of it in order to maintain comfort. It has made slaves of thousands of people, and it may make a physical slave of anyone. For this reason it is the most dreaded of all drugs; in fact, it is the only one of which physicians need have any special fear. The chronic user of opium or any of its various addicting preparations does not do as much

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\* Read before the Society, January 11, 1939.



harm to his physical and mental well-being as the chronic user of cocaine or marihuana, but addiction to opiates is in the aggregate much more harmful, because more people are likely to acquire it and it is so much more likely to become chronic. Opium more than any other drug satisfies a fundamental human urge for peace and calm, and it does this without causing any irresponsible type of intoxication, such as is brought about in so many people by the use of alcohol or marihuana. It is for this reason that the drug is so dangerous, and it is largely because such a type of reaction appeals so strongly to nervously unstable people that opium addiction is so difficult to cure. Physical dependence, however, adds a great deal to the problem, and the physical dependence as expressed by the intense withdrawal symptoms is such a striking thing that more attention has been paid to it. As a result, a large number of treatments directed toward relief for or cure of the withdrawal symptoms have been invented. It has been claimed for a number of these treatments that they are specific, both for the dependence factor and for the psychologic factors that were sometimes recognized by the inventors of these treatments.

The specific treatments have been based on erroneous theories of tolerance and dependence. It naturally follows that most of these treatments are useless. Some of them are positively harmful and dangerous, but all of those which provide for the withdrawal of the opium are effective, provided that in the course of treatment nothing is done that kills the patient. This is an accident which has happened a number of times, either because of sure cure poisons given the patient or because of the combined effect of these poisons and the depressing physical effects of withdrawal.

There are several reasons for the invention of so many useless treatments that were supposed to solve the problem. First among these is that any patient from whom the morphine is withdrawn rapidly gets well regardless of what else is done for him, provided he survives the treatment. Another reason is that drug addicts

who have strong habits react in different degrees to the effects of withdrawal. Some suffer much and complain very little, while others suffer little and complain very much. Possibly the most important reason for error at the present time is that only about 20 per cent of addicts who present themselves for treatment have strong physical habits. They naturally are easily cured, and too often the treatment is given credit for what nature has done.

Among treatments that have been widely used are various types of belladonna treatment, of lipid treatments, treatments based on theories of immunity, and the insulin treatment. Several of the belladonna treatments and one of the lipid treatments, namely narcosan, which treatment is also based on the idea of immune therapy, are harmful. The belladonna treatments have been the most widely used, and it speaks much for human endurance that patients taking some of these treatments survive, and even get well. The gist of these treatments is to take the drug away from the patient within about 36 hours, make him delirious with some belladonna preparation, give drastic purgation for several days, and supplement these measures with numerous other drugs, such as strychnine, pilocarpine, chloral, and other sedatives, as well as heart stimulants, which were often necessary to protect the patient from the effect of the other drugs. The belladonna delirium, by making the patient more or less irresponsible and helpless, does tend to keep under treatment patients who might otherwise discontinue it. This is the only virtue of it, but this reason has never been given by any of the proponents of belladonna treatments.

This group of drugs is said to have some sort of specific action in relieving the withdrawal symptoms, but in controlled experiments it has been found that the patients receiving no treatment at all suffer less and get along much better than patients who take hyoscine or other belladonna preparations in the large doses that are advised. The purgation incident to this treatment was supposed to eliminate toxins that were said to be responsible for the withdrawal

symptoms. It is now definitely known that the withdrawal symptoms are not due to a toxemia, and it is also known that the purgation only adds to the dehydrating effect caused by the vomiting and purgation that take place in practically every patient from whom opium is withdrawn, regardless of whether or not he is purged. As much as 1 grain of strychnine has been given in the course of 8 hours to patients in withdrawal, in spite of the fact that what the patient is chiefly suffering from during this period is extreme hypersensitiveness. Pilocarpine, a drug which causes sweating and outpouring of other secretions, is also given for its detoxicating effect, and with the same result as purgation, namely, collapse, and in some cases death, due to increased disturbance of already disturbed functions.

It has been claimed for some of the belladonna treatments, for the narcosan treatment, and several others, that they not only relieve the symptoms, but that they permanently obliterate the craving for narcotics and create a disgust for them. These claims have all been disproven. They are cited merely to illustrate the uncertainties of deductions made from uncontrolled observations.

Two more specific treatments will be cited. One, the autogenous serum (blister) treatment, has been given to thousands of patients. It is based on the theory that an antibody that is present in high concentration in the skin will neutralize a toxin that has been stimulated through the giving of morphine, and which in the addict is neutralized by the morphine. A blister is made on the skin and injections of the serum from this blister are made at intervals of 4 days, while the morphine is being gradually withdrawn. This is the least harmful of all the specific treatments; in fact, the blister does very little harm and it may in some cases have a favorable psychologic effect by directing the patient's attention toward an irritant that is supposed to be doing him some good. Under controlled experiments made by substituting in the control series of patients, without their knowledge, injections of normal salt solution in-

stead of the serum, it was found that the control cases suffered slightly less than the serum cases, but both series of cases were irritated by the blister.

The other, Sakel's insulin treatment for drug addiction, is especially interesting, in view of the apparent benefit of insulin in the treatment of certain mental conditions. Sakel invented his insulin treatment for morphinism before he tried insulin in schizophrenia. He thought that he got excellent results, but he did not make extravagant claims for the treatment, such as have been made for other specific treatments. Sakel invented an ingenious theory to explain morphinism and the supposed beneficial effects of insulin upon it. His theory is simply this. The cells normally have a receptor to which a sensitizing hormone, epinephrine, attaches itself to cause normal sensation. When morphine is injected into the body it attaches to the receptor, displacing the hormone, thereby decreasing sensation and producing a sense of euphoria. The morphine, however, causes the development of other receptors. When morphine is withdrawn the hormone, epinephrine, attaches to the increased number of receptors, causing increased sensitivity and the withdrawal symptoms. When insulin is injected it displaces the hormone from the receptors, bringing about a normal state of feeling again. Sakel thought that during the withdrawal period the patients had hypoglycemia, and he naturally had to work that into his theory. His explanation was that epinephrine, instead of attending to its normal metabolic functions, one of which is to cause the outpouring of sugar into the blood, was busy stimulating the cells through the medium of these increased receptors. Sakel's theory must be in part wrong, because of thousands of patients tested at Lexington\* none had hypoglycemia as he states they should have, and all had a very definite hyperglycemia during the withdrawal period. The insulin treatment also falls down when used along with controls, but it must be said for it that it does not harm

\* United States Public Health Service Hospital, Lexington, Kentucky.



the patient, as so many other treatments do. The insulin is not given, however, to the extent of shock, as in schizophrenia. If it were given to this extent it would certainly cause some deaths in drug addicts. The insulin treatment of morphinism and the theory back of it has nothing whatever to do with the treatment of schizophrenia. Insulin may be a valuable remedy for schizophrenia, but I will offer nothing here concerning this treatment.

The withdrawal symptoms of morphinism have been explained as due to anaphylactic shock, the theory being that morphine, when injected, produces an antigen which causes the development of antibodies that on the withdrawal of morphine produce shock. The widely advertised drug, "Rossium," was said to counteract this shock in a specific way. The fact of the matter is that the withdrawal symptoms of morphinism have no relation whatever to anaphylactic shock. In order to prove his theory the author of this treatment, a chemist, claimed that the symptoms of morphinism suddenly started up about the twentieth day, and that if after once being cured an addict was given several years later a minute amount of morphine, he would develop all the withdrawal symptoms again from this single dose, provided the morphine was not continued. These two statements have been abundantly disproved, and the wonder is that anyone in any way acquainted with morphinism or anaphylaxis should ever have accepted them, but they were accepted and "Rossium" for a time was widely used. Under controlled experiments this drug has been proved to be entirely useless, and also quite harmless. The treatment is cited merely to illustrate that addicts will get over the withdrawal period regardless of what is done or not done, and that most any treatment may be thought to be effective if administered by inexperienced people without controls to check its value.

It has been thought by some people, even physicians, to be a sin to give morphine to addicts even in treatment, and this biased idea has led to a number of deaths. Nevertheless,

many of the patients who have been subjected to abrupt withdrawal of morphine would doubtless have died if they had been given the benefit of some of the scientific treatments mentioned above. Abrupt withdrawal of morphine without drug medication has been used in prisons extensively and effectively, but it causes unnecessary suffering and is dangerous to persons with strong habits or weak hearts. This treatment can, however, be successfully used in healthy young persons who have only weak habits, but it should always be supplemented by some supportive measures. It has been found by experimental work at Lexington that a single dose of morphine given after 48 hours of abstinence causes a marked decrease in the withdrawal symptoms, which is maintained to the end of the treatment even if no more morphine is given. We have also concluded that no physically healthy patient who gets as much as 3 grains of morphine spread over the first 4 days of the withdrawal period will collapse.

In our experience the treatment that gives the best effect with the least danger is a rapid withdrawal in from 4 to 10 days, the morphine being supplemented in some cases by the use of codeine, in doses of as much as 4 grains per day towards the end. One thousand c.c. of 5 per cent glucose solution given intravenously 3 times a day prevents dehydration, reduces the weight loss, and eases the sense of restlessness for about 2 hours after each injection. Fifteen to 30 grains of bromide 4 times daily for the first 3 days also reduces restlessness, but bromides must be carefully watched and never continued beyond the fourth day. A hypnotic before bedtime is always desirable, and paraldehyde, from 10 to 20 c.c. in oil by rectum, is one of the most effective and least harmful. Diarrhea is controlled by bismuth subcarbonate in 5-grain doses. The patient is allowed to get out of bed and walk around whenever he cares to. Under this treatment recovery from the symptoms is rapid; in fact, the physical symptoms remaining 4 days after the last dose of morphine are very slight, and the patient begins to gain weight. Doubtless there are other treatments that would



be effective in morphine withdrawal, but there is none that will eliminate all of the distressing symptoms during the withdrawal period.

A prolonged withdrawal for a period of 40 days has been tried. In this treatment there is practically no suffering, but the patients are restless during the entire period, and some of them, seeing other patients more strenuously treated quickly get well, have asked to have the treatment terminated by a more rapid withdrawal so that they might be quickly relieved. In sanitariums it is, of course, necessary to temporize more with patients than in public institutions where they can be controlled, but even here the withdrawal that is prolonged is likely to be ineffective because the patient is apt eventually to get tired of the treatment and discontinue it.

The withdrawal treatment is, as has been stated, not the most important element of treatment insofar as permanent cure is concerned. Addicts relapse with distressing frequency. Some relapse because they discontinue treatment immediately after the withdrawal treatment and before all of the body functions have fully readjusted themselves to abstinence. Experiments made at Lexington indicate that some physical functions have not returned entirely to normal after as much as 4 months, even though the patient apparently is not suffering. More important than this as a cause of relapse is the innate disposition of the patient which impelled him in the first place to adjust to life by blotting out his inadequacies through the use of narcotics. This use is a protective mechanism which for the time being is effective, but which always fails in the long run.

The average psychopathic or neurotic addict normally feels inferior, discontented and restless. Morphine at first causes this triad to be replaced by feelings of confidence, contentment and ease. The change is so striking in psychopathic patients that it is interpreted by them as genuine pleasure, and they are impelled to continue with the drug in order to maintain the relief that it gives. But I will not here attempt to explain what type of analysis or psycho-

therapy should be attempted to rid the patient of the inherent inadequacies that make narcotics so attractive to him.

There is developed, however, along with physical dependence, a psychic habit connected with the taking of morphine that adds greatly to the difficulty of permanent cure, that will be briefly explained. The addict relieves himself from oncoming discomfort by the injection of morphine so often in the course of years, and he has used it so often in pleasurable social settings, that he is conditioned by many unavoidable happenings to return immediately to the drug. He may leave an institution fully intending to abstain from narcotics, but unless he has been unconditioned to meeting pleasure and pain in an abnormal way he is impelled imperceptibly to the same type of reaction that he had so often before, namely, solution by narcotics. He is cheered by meeting a friend or he is depressed by catching a cold, or by some other minor detail, and in both instances gravitates toward narcotics. It is this reaction that gives virtue to time in the treatment of addicts. They should when possible be kept in a reasonably protected environment away from narcotics until, by adjusting normally to both pleasurable and painful situations a number of times, a new habit pattern is formed. It is, of course, necessary to have cooperation both for this and for more subtle types of psychotherapeutic treatment. Force is not effective, but that type of force implied in imprisonment of an addict who knows he has violated the law is apparently not detrimental when he is treated as a patient, with a sympathetic psychiatric approach.

In order to uncondition addicts to the use of narcotics and build up new habit patterns in them it is the aim at Lexington to keep them busy doing something useful or interesting during their entire waking hours. For this purpose outdoor work on a thousand-acre farm is provided for a large portion of the patients. Others work in shops and in various institutional activities, their work being changed according to indications. Above all, it has been found to

be important to trust patients, if they coöperate and show that they are worthy of trust. Too many addicts in prisons have been treated as good-for-nothing criminals worthy of nothing but punishment, with the result that they have reacted both in prison and after they leave it as they were expected to react. We have had prisoner patients relapse immediately after being discharged and then return as voluntary patients and remain cured.

There is an element of diminishing returns in the treatment of drug addicts of the present day, because the more stable are being eliminated by cure, leaving the less stable to relapse and return for further treatment, but in spite of this the results have been good. Thirty per cent of the patients that have been discharged are known to be well; 30 per cent have relapsed; and information is not available for the remainder. Some who have been in prison half a dozen times because of narcotic addiction have remained cured after 2 years. We know, however, that some of the types treated there are not likely ever to be cured, regardless of what

is done for them. They started off with rather poor personal equipment and their deficiencies have been increased to such an extent by dissipation and the unfavorable environment of prisons that they have lost hope and do not coöperate. Nevertheless, these people are all suffering with a weakness for which they should be treated rather than punished. Hope of cure should never be abandoned, regardless of previous failures.

Cocaine and marihuana do not cause physical dependence that brings about distressing withdrawal symptoms when these drugs are discontinued. The withdrawal treatment of addiction to them is, therefore, quite simple. All one has to do is to take away the drug. But the background of chronic users of these drugs is the same as the background of chronic users of opiates, and the treatment designed to cure permanently cocaine and marihuana addicts does not differ essentially from the treatment of opium addicts. An effort must be made to reorientate the personality and build up new habits of adjustment.

**Pneumococcic Pneumonias Complicating Pregnancy and the Puerperium.** Data were studied concerning the incidence of pneumonia in pregnancy at the Boston City Hospital. About one of every eight women of child-bearing age who had pneumonia was pregnant, 0.63 per cent of all women admitted during pregnancy or parturition had pneumonia and in 1.2 per cent of all the cases of pneumonia the condition was complicated by pregnancy.

A series of 212 cases of typed pneumococcic pneumonia complicating pregnancy and the puerperium which occurred at the Boston City Hospital and the Boston Lying-in Hospital were analyzed with respect to the more important features concerning both the pneumonia and the pregnancy.

The incidence of pneumococcic types in these cases was similar to that found in all cases of pneumonia in adults. The types for which specific antipneumococcus serum has proved effective were the most frequent.

Bacteremia was more frequent than in all cases for the same age groups and the death rates were higher than in corresponding cases for the same age group.

The death rates were highest for late pregnancy and for women whose pregnancy was terminated during the disease.

The death rate for all the serum treated patients was almost one half of that for the corresponding non-serum treated patients. The lower death rates were for pneumonia complicating both early and late pregnancy, for postpartum pneumonia, for women who were delivered and those whose pregnancy was unaffected.

The frequency with which pregnancy was terminated did not seem to be influenced by serum treatment.

*Extract from article by MAXWELL FINLAND, M.D., Boston, Mass., and THOMAS D. DUBLIN, M.D., New York, N. Y., Journal, American Medical Association, March 18, 1939, p. 1027.*

**Immunization Against Pertussis.** Immunization against pertussis was attempted in a well baby clinic. Two hundred and eleven infants were vaccinated with an unwashed phase I vaccine in a total dose of 80,000 million organisms. One hundred and eighty-two infants were followed as controls.

During a period of thirty-four months there occurred twenty-nine exposures in the vaccinated group followed by nine cases and twenty escapes. During the same period thirty-two exposures occurred in the control group followed by twenty-nine cases and three escapes. The difference of 59.6 per cent with a standard error of 12.4 per cent in the resultant communicability rates was statistically significant.

Of the nine cases occurring in vaccinated children only three were typical. In these instances vaccine had been administered fourteen months or more previously. The other six cases occurring in vaccinated children were mild, atypical or questionable. Of the twenty-nine attacks occurring in the control children three were severe and twenty were typical. No deaths occurred in either group.

These observations indicate that the vaccine used conferred either complete or partial protection on the great majority of those inoculated.

*Extract from article by JOHN J. MILLER, JR., M.D., and HAROLD K. FABER, M.D., San Francisco, Calif., Journal, American Medical Association, March 25, 1939, p. 1145.*



## OFFICE ROUTINE FOR THE TREATMENT OF EARLY TOXEMIAS OF PREGNANCY AND BORDERLINE CASES\*

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The frequent references in the lay press to the high maternal mortality rate cause considerable wonder among our patients about what the profession is doing to try to better it. Not knowing that different sets of statistics may be drawn up in several ways and thus make direct comparison impossible, some people have the idea that American doctors are perhaps somewhat slow to institute efforts toward improvement. Although we know that this is not the case, this frame of mind affects every physician who handles even one obstetrical case.

The consensus of opinion seems to be that with infection and hemorrhage there is a small but perhaps irreducible mortality. The toxemias, however, appear to offer a most fertile field for reduplicated efforts. In a study of 153,598 maternal deaths which occurred from 1924 to 1928, Bland<sup>1</sup> found an incidence of 13.5 per cent of deaths due to toxemia. This means that about 20,735 women lost their lives because of toxemia in that time. In a study of eclampsia in Maryland, Reese and Peyton<sup>2</sup> found that only 5 per cent of the fatal cases received adequate prenatal care according to the standards of the Children's Bureau. While this 5 per cent figure from Maryland is not the national figure, which might even be worse, the inference is that a great number of these patients might have been saved.

While the worst figures do come from the rural areas, the facts seem to indicate that a review of some of the recent literature along this line might not be remiss. I have made it a point to ask a number of my friends as I happened to meet them just what they were doing for their cases of early toxemia of pregnancy. No two seemed to do exactly the same, although the time-honored regimen of rest and a low-protein, salt-free diet appeared to be the general basis. Fortunately, perhaps, only a few of the toxemias become severe, no matter what method

of care is instituted. Eclampsia is still a disease of theories. The aphorism about the amount of ignorance being directly proportional to the number of methods of therapy is a frequent statement regarding this subject.

The prevention of eclampsia is certainly much easier than the cure after it becomes established. The diagnostic aids to accomplish this are found in the office of every practitioner. These are scales, a blood pressure apparatus, and one of the simple methods for testing the urine for albumin. These should be used at each prenatal visit made by the patient.

We expect every pregnant woman to gain a certain amount of weight. This gain should not show marked irregularities in rate and should not be excessive, but it should average about 15 plus or minus 5 ounces a week during the last 6 months.<sup>3</sup> It is safer to undergain than overgain. The stature of the patient should, of course, be considered. While every patient that gains more than 20 ounces weekly will not develop toxemia, a good proportion of toxemic patients will be found to have exceeded the average gain at some time. Carbohydrate restriction should be frequently resorted to when weight gain is excessive.

Large variations in weight usually mean a disturbance of the fluid content of the body. Curtis quotes Elwyn that the body may hold 5 or 6 liters of fluid before visible edema appears. How are we going to control this abnormal retention of fluids in some cases? We must either reduce the fluid intake or avoid substances which when absorbed alter the osmotic tension of the tissues.

The main factor which holds water in the body is table salt. One of the pernicious habits of civilization is the oversalting of our food. Between 1 and 2 grams of salt per day are necessary in the body economy. This amount could be obtained from the salt already present in our food. It has been estimated<sup>4</sup> that some

\* Read before the Society, December 14, 1938.



people ingest 15 to 20 grams of salt per day by adding it to food both while it is being cooked and again at the table. When this salt is absorbed it acts like a sponge in the presence of water. It is not unusual to see a patient lose 5 or 6 pounds in a week on just a salt-free diet. If, however, after being put on a salt-free diet, retained fluid does not seem to be excreted, it is occasionally necessary to administer ammonium chloride. Some patients require a good deal of persuasion to omit salt from their diet on account of the food being so unpalatable to their taste. They are slaves of the salt habit. It is possible to replace some of the salt with potassium chloride which will also help excrete sodium chloride. Some investigators are afraid of potassium, but Barker,<sup>5</sup> who used up to 5 grams of the chloride per day, did not notice any retention or toxic symptoms from it. Zangemeister gave a salt-free diet but his purpose was to enable his patients to refrain from drinking water.

I would like to say a word about the large amounts of sodium ingested by certain patients who are troubled with heartburn. We frequently see patients who average two or three teaspoonfuls of bicarbonate of soda daily in an attempt to seek relief from this annoying symptom. The sodium thus taken in is added to that of the table salt. These people should be instructed as to the kinds of food most likely to give relief and given calcium carbonate if any alkali is needed. If constipation is present the oxide of magnesia and milk of magnesia are most useful drugs.

Too large quantities of milk should be avoided for the same reason. Milk contains 1.7 grams of sodium chloride per liter and this amount should be considered when contemplating dietary changes. DeSnoo<sup>4</sup> was able to abolish eclampsia at his Utrecht clinic by eliminating milk and salt from the diet. At the same time he allowed his patients to have anything else that they liked along with even an additional liter or two of water.

In certain instances in which the patient does not have complete control over the preparation

or selection of her food, it may become necessary to limit the fluid intake. This is done most easily by asking her to measure the 24-hour urine output and to drink not more than twice that volume of fluid. It is a good thing to explain that milk contains 87 per cent water.

The protein question is still being argued, but obstetricians are more and more allowing their patients a liberal quantity of protein. Barker<sup>6</sup> found that 50 per cent of private patients as well as clinic patients consumed a diet deficient in protein when questioned specifically about meat, eggs, milk and cheese. To some extent this is due to the prevalent lay fear of eating meat during pregnancy. Deficient protein intake went with a pale, sallow complexion, puffiness of the face and edema of the extremities. These patients showed a diminished blood urea nitrogen and an increased cholesterol. This change was corrected by giving more protein food. Dodge and Frost<sup>7</sup> found that while the plasma albumin averaged 4.9 grams per 100 c.c., in normal pregnancy it dropped to 4.27 and in toxic pregnancy to 3.87. This means a decrease of 20 per cent, and it changes the osmotic pressure of the plasma. Strauss gave 200 or more grams of protein daily in toxic cases and noted improvement. He also noted that patients with hypoproteinemia had weight gain with edema, elevations of blood pressure and occasionally albuminuria when sodium chloride or sodium bicarbonate was given. The League of Nations Committee on Nutrition advised 1.5 to 2.0 grams of protein daily per kilogram of body weight to cover the maternal and fetal needs. Harden said that no preëclamptic patient developed eclampsia in his clinic in the past 7 years under his method of protein stabilization, although the general incidence remained unchanged in the surrounding country. His protein stabilization meant being certain that the patient had a positive nitrogen balance to take care of all metabolic requirements. Dodge and Frost<sup>7</sup> were able to eliminate eclampsia from their clinic by the same method.

The hypertension which accompanies tox-

emias is due to vascular spasticity. When long continued this symptom may be temporarily helped by small doses of phenobarbital. This palliation is reasonable when we remember that vessels remaining spastic too long undergo degenerative changes with terminal hyalinization of the walls. If the vessel must become rigid it may better serve its function with a lumen of the largest possible caliber.

When patients show toxemic symptoms it becomes natural for us to wonder whether or not the renal function is impaired and if so, to what degree. Most fortunately the best method of investigating this function is also the easiest.<sup>8, 9</sup> In fact, it is so easy that it may be used in every questionable case. The concentration and dilution or excretion tests of kidney function call for only a measuring cup and a urinometer. These tests may be performed weekly or as often as appears necessary to watch the general trend of the case. In this manner the very occasional case which does not respond well to treatment will be picked up early by the gradual but progressively diminishing renal function.

These tests are sometimes called water tests and are carried out in the following manner as devised by Volhard.<sup>8</sup> Both start the previous evening with not more than 2 glasses of water with the evening meal at 6 p.m. Nothing further is taken until the next morning after the bladder is emptied at 8 a.m. For the excretory test 3 pints or about 1500 c.c. of water or weak tea are taken between 8 and 8:30 a.m. Plain water is best on account of the caffeine content of the tea. The bladder is emptied at 9:30, 10:30, and 11:30 a.m. These urines are put in one large container and brought to the office. There should be 1250 c.c. or more urine if the function is normal. A reduction to 1100 c.c. shows beginning decrease in excretory ability, while a reduction to 900 c.c. shows marked insufficiency. The basis of this test is the fact that ingested water is excreted by the kidneys within 3 hours.

In the concentration test nothing is taken by mouth after the evening meal except not more

than 2 glasses of fluid. The bladder is emptied at 8 a.m. and this urine discarded. The bladder is emptied again at 9, 10, and 11 a.m., the separate samples being put in different bottles labelled with the time at which they were passed. If the kidneys are normal, at least one of the specimens will have a specific gravity of 1.030 or more. If 1.022 is the highest specific gravity, a moderate insufficiency would be indicated, while one of 1.016 would mean a much more severe degree. If protein is present in the urine, serum should be added to a protein-free urine until the qualitative test for protein in both urines is the same. Then by subtracting the addition in specific gravity which the known protein-free urine was increased from that of the patient's urine, the true specific gravity may be obtained. We are interested in the specific gravity due to salts, urea, etc., ordinarily present in the urine.

Sometimes we find it desirable to try to separate essential hypertension and nephritic cases from true preëclampsics. Experimentation is being carried out by noting the different types of reaction to the cold pressor test. This test is carried out in the following manner.<sup>10</sup> The patient is placed in a comfortable position or, perhaps better, a semi-reclining position in bed. The cuff of a blood pressure apparatus is applied to the arm and readings taken every 2 or 3 minutes until a basal reading is obtained. The hand of the arm containing the blood pressure cuff is immersed to the wrist in ice water in a basin. Blood pressure readings are taken every 30 seconds for 2 minutes, after which the hand is removed from the water. The pressure is then taken at intervals of 3 minutes for an additional 15 minutes to note the time required for it to return to the normal level.

Hines and Brown<sup>10</sup> at first called a patient a hyper-reactor if an increase in systolic pressure of more than 15 mm. Hg was noted. Various workers gradually increased this figure until Dieckmann and his co-workers reached the point of considering anything under 30 mm. Hg as normal. Vascular renal cases show more than 30 mm. increase. Preëclampsics give a

normal reaction unless, of course, they have a hypertensive background, which includes family history.

When 1 or 2 minims of pituitrin are injected, the elevation remains low, below 20 mm. Hg, in pure vascular renal cases. It rises from 28 to 80 mm. with an average of 50 mm. in the preëclamptic type. These findings are interesting and may turn out to be an easy way of differentiating the two types. It should be very firmly impressed, however, that, if a patient has any elevation of blood pressure, a rapid rise of 50 to 80 mm. Hg is not to be invited without due consideration as to its possibilities.

Patients frequently go to doctors to try to find out whether or not they should undertake the risk of a pregnancy. Of course, the routine history and complete physical examination are indispensable. In addition to these, if a concentration and dilution test were done on the urine along with a cold pressor test, the knowledge obtained would increase the accuracy of our final statement.

In closing, I will name the three things that

should be done whenever a patient appears with an abnormally large weight gain and/or hypertension, proteinuria, edema, etc.:

1. A rigid, salt-free regimen;
2. Inclusion in the diet of the usual amounts or a slight increase of meat, fish and eggs;
3. Dilution and concentration tests on the urine.

In addition, if hypertension is more than transient, small doses of phenobarbital are indicated.

#### BIBLIOGRAPHY

1. ROSS, R. A., AND OTHERS: *Am. J. Obst. & Gynec.*, 1938, **35**, 426.
2. REESE, J. M., AND PEYTON, F. W.: *Am. J. Obst. & Gynec.*, 1938, **36**, 130.
3. DIECKMANN, W. J., AND BROWN, I.: *Am. J. Obst. & Gynec.*, 1938, **36**, 798.
4. DESNOO, K.: *Am. J. Obst. & Gynec.*, 1937, **34**, 911.
5. BARKER, M. H., AND ROBINSON, R.: *J. A. M. A.*, 1938, **111**, 1907.
6. BARKER, M. H.: *Am. J. Obst. & Gynec.*, 1938, **35**, 949.
7. DODGE, E. F., AND FROST, T. T.: *J. A. M. A.*, 1938, **111**, 1898.
8. HOLMAN, A. W.: *Am. J. Surg.*, 1938, **40**, 365.
9. CHESLEY, L. C.: *Surg., Gynec. & Obst.*, 1938, **67**, 481.
10. DIECKMANN, W. J., MICHEL, H. L., AND WOODRUFF, P. W.: *Am. J. Obst. & Gynec.*, 1938, **36**, 408.

## CHORIOANGIOMA OF THE PLACENTA

### REVIEW AND REPORT OF A CASE

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Chorioangioma of the placenta was first described by John Clarke in 1798. The first case in the American literature was published by Reis, according to Scott,<sup>1</sup> in 1904. In 1906, Pitha, after a careful study, concluded that all placental tumors were angiomatous in nature, with varying amounts of fibrous tissue, and assigned to them the name of chorioangioma. Yamato, quoted by Scott, in 1913 collected 116 cases and added one of his own, but Scott was able to find 6 more cases that had been published prior to 1913 and 30 cases between 1912 and 1924, making a total of 153 cases. However, in the same year Siddall<sup>2, 3</sup> was able to verify only 131 cases after a careful survey. We have been able to find 46 reported in the

world literature between 1924 and 1938. If we accept Siddall's figures, the total number of cases reported up to 1938 is only 177. However, Scott reported 147 cases in 1924, and Kückens<sup>4</sup> added 22 between 1924 and 1930. Von Szathmáry<sup>5, 6</sup> reported 238 placental tumors of all types in 1934. In spite of these conflicting reports, we believe it is safe to say that there have been less than 200 authenticated cases of chorioangioma reported in the medical literature to date.

#### DESCRIPTION

Placental angiomata vary in size from microscopic nodules to the size of a large melon. The larger tumors are especially rare. Von Szath-



máry<sup>5, 6</sup> found the following variations in size in his series:

|                  |    |
|------------------|----|
| Bean.....        | 3  |
| Hazelnut.....    | 10 |
| Large nut.....   | 47 |
| Hen's egg.....   | 34 |
| Apple.....       | 55 |
| Fist.....        | 2  |
| Double fist..... | 5  |

In the cases reviewed by us the size varied from the size of a pea to that of a cocoanut.

The tumors may be single or multiple, as many as 100 nodules having been found in a single placenta (Kückens<sup>4</sup>). The color varies from light yellow to dark brown or red, depending on the proportion of the blood vessels to fibrous tissue, which varies in different tumors and in different portions of the same tumor, giving most of these tumors a mottled appearance. The consistency of the tumor varies with the color, the lighter areas being firmer while the darker areas are softer and more fluctuant.

These tumors may be found in any portion of the placenta, one even having been reported as arising directly from the blood vessels of the umbilical cord (Hinkhouse<sup>7</sup>). They are most commonly found on the fetal surface near the periphery of the placenta, lying just below the amniotic membrane. The larger ones may even protrude into the amniotic sac and are often attached to the placenta by only a narrow pedicle. The smaller tumors may not appear on the surface at all, being buried in the substance of the placenta.

#### INCIDENCE

With less than 200 cases reported in the last 140 years, one would expect to find that these tumors are of rare occurrence. Leopold, quoted by Siddall,<sup>2</sup> found only 1 case in 7,000 to 8,000 placentas. Schickele, also quoted by Siddall,<sup>2</sup> found only 2 cases in 20,000 deliveries. However, Krause, as noted by Siddall, observed 4 cases in one year at the Vienna Clinic and believed that many of the smaller tumors were overlooked. This seems highly probable in view of the fact that Siddall,<sup>2, 3</sup> in a careful examination of 600 placentas, was able to find 6 chorioangiomas, an incidence of 1 per cent.

All of these tumors were of small size and would probably have been overlooked in a routine examination. Reports of these tumors in the American literature are especially rare, only 9 cases having been reported in the last 14 years, and 6 of these were reported by one man.

#### ETIOLOGY

The origin of these tumors is still in doubt. Albert and Dienst, quoted by Scott,<sup>1</sup> believed that they arose from the vessels of the allantois, but Schickele proved that they arise from the chorionic vessels of the villi. Pitha, Dienst, Albert and others believed that they arose in the early weeks of pregnancy, but Krause and Schickele thought that they might originate at any period of intrauterine life. In view of the marked variation in the size of these tumors, one must either accept this tenet or postulate a marked difference in their rates of growth. Kückens<sup>4</sup> advanced the theory that they begin as a capillary hyperplasia, then become single angiomatous nodules, and finally develop into diffuse angiomatosis. This theory may hold true in some cases of multiple tumors, but certainly the tremendous size of some of the single nodules that have been found indicate that most of these growths never become diffuse or multiple.

Plaucher and Savoy, quoted by Siddall,<sup>2</sup> believed that syphilis was the etiologic factor, but no increased incidence of syphilis has been found in any of the reported series. Dienst, quoted by Scott,<sup>1</sup> thought that hypertension and stasis during the formation of the capillary vessels caused a proliferation of the endothelium. But no evidence that such a hypertension occurs has ever been produced. We have as yet no theory which adequately explains the formation of these tumors. One may say, however, that there is a definite proliferation of the endothelial membrane of the chorionic blood vessels together with an increase in the connective tissue under the influence of some unknown stimulus.

#### CLINICAL SIGNIFICANCE

The smaller angiomas have little or no clinical significance, but the larger ones are fre-

quently associated with hydramnios, premature labor, high fetal mortality, retained placenta, and postpartum hemorrhage.

The high fetal mortality is evidently due to two factors, prematurity and malformations. Albert, quoted by Siddall, in a review of 36 cases, found only one third of the infants normal. The remainder were below normal weight and were premature or stillborn. Dienst, quoted by Siddall, found a fetal mortality of 33 per cent in 39 cases. Siddall<sup>2,3</sup> reported 41 fetal or neonatal deaths in 109 cases, and our series shows a fetal mortality of 11 deaths in 44 cases or 25 per cent. Of these 11 cases, 1 had hydrocephalus, 2 had congenital fetal edema, 2 were macerated stillbirths, and the remainder died shortly after birth of prematurity.

Siddall<sup>2,3</sup> noted postpartum hemorrhage in 6 cases, and manual removal in 4 cases in 109. We have noted a much greater incidence of these two complications. In our series, postpartum hemorrhage occurred 4 times and manual removal twice in 44 cases, a percentage of 9 per cent and 4.5 per cent, respectively. Albert believed that the increased size of the placenta prevented satisfactory contractions of the uterus in the third stage, while many others have claimed that the hemorrhage was the direct result of the overdistension of the uterus due to the hydramnios. But in our series, only 1 of the cases that had a postpartum hemorrhage had an accompanying hydramnios, and neither of the cases requiring manual removal had any increase in the amount of amniotic fluid. We are inclined to think that the chief factor is the increased adherence of the angiomatous portion of the placenta to the uterine wall.

There appears to be no relationship between the age or parity of the individual and the occurrence of these tumors. We were unable to find any correlation with either of these factors, and our results agree with others who have investigated the subject.

An increase in the incidence of hydramnios has been a constant finding by all of the writers on the subject. Siddall<sup>2,3</sup> noted 40 cases of excessive amniotic fluid in 109, and of these 24

of the infants died. In our series there were 7 cases of hydramnios, and 4 of the infants expired.

We believe that the presence of hydramnios in these cases is due to an increase in the capillary bed underlying the amnion, and the transudation of an increased amount of fluid from this capillary bed. Or, if the amniotic fluid is the result of secretion of the cells of the amnion, then it seems logical to assume that a marked increase in the blood supply of these cells causes an increase in their secretory function with a resul-



FIG. 1. Gross appearance of the tumor lying in its bed on the maternal surface of the placenta

tant hydramnios. This theory offers an explanation of the fact that many large tumors have no accompanying increase in amniotic fluid. It is only those which lie directly beneath the amnion that tend to cause hydramnios.

We have briefly tabulated the clinical features of the 46 cases reported between 1924 and 1938.

#### REPORT OF CASE

Mrs. A. S., aged 41 years, para I and gravida II, was referred by Dr. W. A. Shannon. The last normal period was on May 5, 1937. There was a justo minor pelvis and a large baby. The patient was admitted to Garfield Hospital on January 30, 1938. An elective classical Caesarian section was performed on January 31, 1938,

with the delivery of an 8 pound 6 ounce male infant in excellent condition. Manual removal of the placenta Examination of the placenta following removal revealed a tumor mass lying in a bed on the maternal sur-

| AUTHOR                        | NUMBER OF TUMORS | ABNORMALITIES                        | SIZE               | FATE OF INFANT                            |
|-------------------------------|------------------|--------------------------------------|--------------------|-------------------------------------------|
| Szathmáry, Z. <sup>5</sup>    | Many             | Hydramnios, hydrocephalus            | Diffuse            | Stillbirth                                |
| Beaufays, J. <sup>8</sup>     | 1                | Hydramnios                           | 21 x 13 x 4 cm.    | Premature, died in 1 hr.                  |
| Bronstein, L. M. <sup>9</sup> | 1                | Postpartum hemorrhage                | 7 x 9 x 4 cm.      | Living, full term                         |
| Montpellier, J. <sup>10</sup> | 1                | Hemorrhage at 4th mo.                | Orange             | Living, full term                         |
| Durante, G. <sup>11</sup>     | 1                | None                                 | Heart              | Living, full term                         |
| Addessi, G. <sup>12</sup>     | 1                | None                                 | Orange             | Living, full term                         |
| Tabata, J. <sup>13</sup>      | 2                | None                                 | Bean size (2)      | Living, full term                         |
| Mubayashi, R. <sup>13</sup>   | Many             | None                                 | Various sizes      | Living, full term                         |
| Kawashima, N. <sup>14</sup>   | 1                | None                                 | 10 x 12 x 5 cm.    | Living, full term                         |
| Mayer, K. <sup>15</sup>       | 1                | Premature labor                      | Apple              | Premature 2170 Gm.; died in 1 hr.         |
| von Toldy <sup>16</sup>       | 1                | Fetal asphyxia; resuscitation        | Apple              | Premature living                          |
| Siddall, R. S. <sup>3</sup>   | 1                | None                                 |                    | Living, full term                         |
| Siddall, R. S.                | 1                | None                                 |                    | Living, full term                         |
| Siddall, R. S.                | 3                | None                                 |                    | Living, full term                         |
| Siddall, R. S.                | 1                | None                                 |                    | Living, full term                         |
| Siddall, R. S. <sup>2</sup>   | 1                | None                                 |                    | Living, full term                         |
| Siddall, R. S.                | 1                | None                                 |                    | Living, full term                         |
| Beaufays <sup>17</sup>        | Many             | Hydramnios, p.p. hemorrhage          |                    | Premature, 28 weeks; stillbirth, 1600 Gm. |
| Walter, A. <sup>18</sup>      | 1                | Retained placenta                    | One cotyledon      | Living, full term                         |
| Walter, A.                    | 1                | None                                 | Apple              | Living, full term                         |
| Philipp, E. <sup>19</sup>     | 1                | No clinical history                  | Plum               |                                           |
| Klaften, E. <sup>20</sup>     | 1                | Hydramnios                           | 10 x 7½ x 8 cm.    | Living, full term                         |
| Maxwell, J. P. <sup>21</sup>  | 1                | Hydramnios                           | 2½ inches diameter | Stillbirth (7 mo.)                        |
| Hinkhouse, M. J. <sup>7</sup> | 1                | Tumor arising from cord              | 10 cm. diameter    | Living, 6 lb.; died 3 days p.p.           |
| Rhamy, B. W. <sup>22</sup>    | 8                | None                                 | Various sizes      | Living, full term                         |
| Emge, L. A. <sup>23</sup>     | 1                | Dystocia due to tumor                | 15 x 12 x 9 cm.    | Living, full term                         |
| Philipp, E. <sup>24</sup>     | 1                | Congenital fetal edema               | Fist               | Stillborn                                 |
| Pomini, F. <sup>25</sup>      | 1                | Hydramnios                           | 11½ x 12 cm.       | Living, 3620 Gm.                          |
| Neumann, H. O. <sup>26</sup>  | 1                | None                                 | 3½ x 3½ cm.        | Living, 3960 Gm.                          |
| Nitschmann, W. <sup>27</sup>  | 1                | Macerated fetus, 6 mo.               | Hen's egg          | Stillbirth                                |
| van Rooy <sup>28</sup>        | 1                | No clinical history                  | Orange             |                                           |
| Superbi, C. <sup>29</sup>     | 18               | Caesarian section; adherent placenta | Various sizes      | Living, 3150 Gm.                          |
| Sussig, L. <sup>30</sup>      | Many             | Fetus died in utero                  | Various sizes      | Stillbirth                                |
| Frayman, S. <sup>31</sup>     | Many             | Manual removal                       | Various sizes      | Living, full term                         |
| Kückens, H. <sup>4</sup>      | 100              | None                                 | Various sizes      | Living, full term                         |
| Szathmáry, Z. <sup>5, 6</sup> | 1                | Congenital fetal edema               | 7 x 5 x 5 cm.      | Stillbirth                                |
| Szathmáry, Z.                 | 1                | None                                 | 4 x 3 x 3 cm.      | Living, full term                         |
| Szathmáry, Z.                 | 1                | None                                 | 10 x 8 x 5 cm.     | Living, full term                         |
| Kühnel <sup>32</sup>          | 1                | Hydramnios                           | Duck egg           | Living, 3850 Gm.                          |
| Kühnel                        | 1                | None                                 | Hen's egg          | Living, 3100 Gm.                          |
| Kühnel                        | 1                | None                                 | Apple              | Living, 3200 Gm.                          |
| Kühnel                        | 1                | None                                 | Hen's egg          | Premature, 2200 Gm.                       |
| Kühnel                        | 1                | None                                 | Orange             | Living, 3150 Gm.                          |
| Kühnel                        | 1                | None                                 | Mandarin           | Living, 3550 Gm.                          |
| Kühnel                        | 1                | Premature separation                 | 8 x 5 cm.          | Premature, died 5th day, 900 Gm.          |
| Kühnel                        | 1                | P.p. hemorrhage                      | Goose egg          | Living, 3200 Gm.                          |

was performed. The patient made an uneventful recovery. The patient made an uneventful face and attached to the placenta by a vascular pedicle (fig. 1). The mass was mottled yellowish red and



definitely lobulated. It was about the size of a fist, measuring about 6 by 8 cm. (fig. 2).

The pathologic report by Dr. J. W. Lindsay follows. Paraffin section from the placenta shows normal placental structure. One section from the tumor represents a poorly organized and degenerated fibrous structure rather vascular with fibrinous material attached. The other section from the tumor consists of a more densely organized tissue very vascular and in large areas defi-

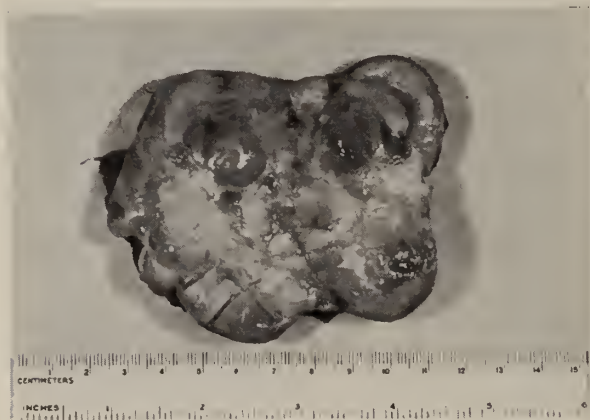


FIG. 2. Cross section of the tumor showing mottling

nately hemangiomatous (fig. 3). Several areas in this section are densely infiltrated by dark staining cells, many of them leukocytes, others suggesting rather definite tissue cells, which, however, are so indistinct in their morphology that it is impossible to identify them conclusively. While some areas suggesting epithelial-lined tubules indicate the remote possibility of teratoma, and the vascularity and degeneration suggest a possible second undeveloped placenta, the description of the attachment and the predominating picture point rather to a hemangioma. There is no evidence of malignancy.

#### SUMMARY

1. Chorioangioma of the placenta is an extremely rare tumor, only 46 cases having been reported in the last 14 years.

2. There is a definite correlation between chorioangioma and hydramnios, premature labor, stillbirth, and postpartum hemorrhage.

3. A case of chorioangioma is presented.

#### BIBLIOGRAPHY

1. SCOTT, R. A.: Surg., Gynec. & Obst., 1924, 39, 216.
2. SIDDALL, R. S.: Am. J. Obst. & Gynec., 1924, 8, 430.
3. SIDDALL, R. S.: Johns Hopkins Hosp. Bull., 1926, 38, 355.
4. KÜCKENS, H.: Monatschr. f. Geburtsh. u. Gynäk., 1930, 85, 105.
5. VON SZATHMÁRY, Z.: Magyar orvos arch., 1934, 35, 267.
6. VON SZATHMÁRY, Z.: Arch. f. Gynäk., 1934, 155, 453.

7. HINKHOUSE, M. J.: China M. J., 1929, 43, 1232.
8. BEAUFAYS, J.: Arch. f. Gynäk., 1937, 164, 646.
9. BRONSTEIN, R. M.: Monatschr. f. Geburtsh. u. Gynäk., 1935, 100, 261.
10. MONTEPELLIER, J., JAHIER, H., AND LEFRANC, M.: Ann. d'anat. path., 1931, 8, 1188.
11. DURANTE, G.: Ann. d'anat. path., 1931, 8, 88.
12. ADDESSI, G.: Clin. ostet., 1931, 33, 227.
13. MIBAYASHI, R.: Jap. J. Obst. & Gynec., 1930, 13, 9.
14. KAWASHIMA, N.: Jap. J. Obst. & Gynec., 1932, 15, 412.
15. MAYER, K.: Arch. f. Gynäk., 1928, 134, 482.
16. VON TOLDY, L.: Zentralbl. f. gynäk., 1925, 49, 2348.
17. BEAUFAYS, J.: Arch. f. Gynäk., 1936, 162, 14.
18. WALTER, A.: Ztschr. f. Geburtsh. u. Gynäk., 1930, 97, 89.
19. PHILIPP, E.: Ztschr. f. Geburtsh. u. Gynäk., 1931, 99, 599.
20. KLAFTEN, E.: Ztschr. f. Geburtsh. u. Gynäk., 1929, 95, 426.
21. MAXWELL, J. P.: China M. J., 1925, 39, 1086.
22. RHAMY, B. W.: J. Lab. & Clinic Med., 1937, 22, 899.
23. EMGE, L. A.: Am. J. Obst. & Gynec., 1927, 14, 35.
24. PHILIPP, E.: Ztschr. f. Geburtsh. u. Gynäk., 1930, 98, 404.
25. POMINI, F.: Riv. ital. di ginec., 1927, 6, 137.
26. NEUMANN, H. O.: Zentralbl. f. Gynäk., 1926, 50, 3195.

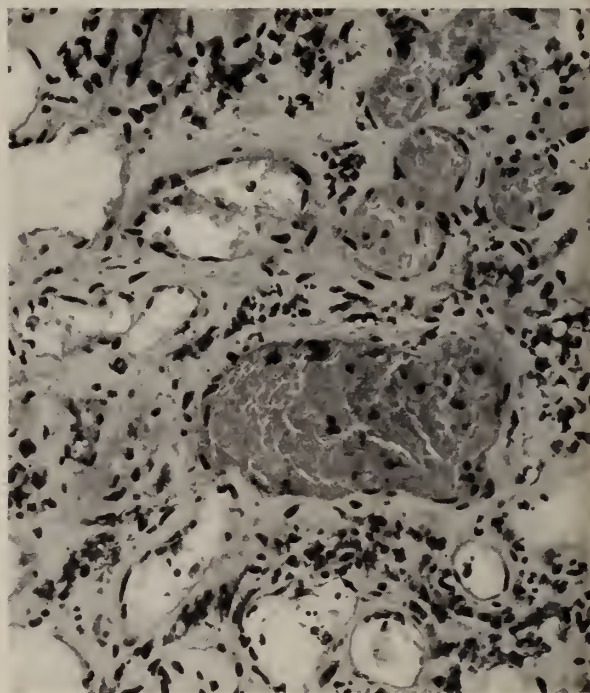


FIG. 3. Microscopic section of the tumor showing angiomatous structure

27. NITSCHMANN, W.: Arch. f. Gynäk., 1927, 129, 674.
28. VAN ROOY: Nederl. Tijdschr. v. Geneesk., 1928, 1, 1761.
29. SUPERBI, C.: Riv. ital. di ginec., 1928, 7, 189.
30. SUSSIG, L.: Arch. per le sc. med., 1929, 53, 79.
31. FRAYMAN, S., AND GORJAJEVA, A.: Monatschr. f. Geburtsh. u. Gynäk., 1928, 78, 185.
32. KÜHNEL, P.: Acta obst. et gynec. Scandinav., 1933, 13, 143.

# ROUTINE TREATMENT OF GONORRHEA IN FEMALES—NONANTISEPTIC METHOD

## SUPPLEMENTARY REPORT<sup>1</sup>

BERNARD NOTES, M.D., F.A.C.S., *Clinical Instructor in Obstetrics and Gynecology, George Washington University School of Medicine*

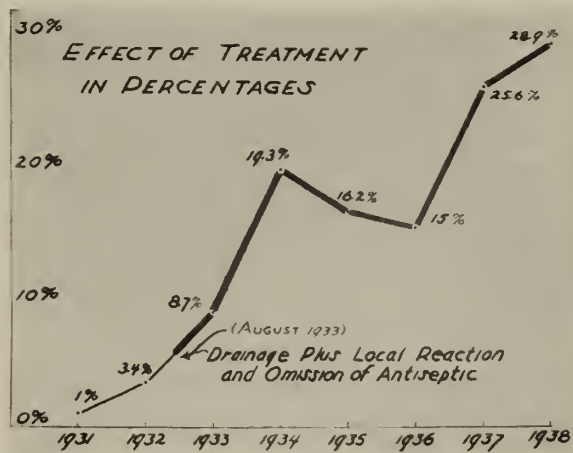
This analysis covers the work of the Gynecological Section, Social Hygiene Clinic of the Health Department of the District of Columbia, during the past four years. During this period 3,394 females with gonorrhea were admitted for treatment as new cases and 705 were discharged as cured, a percentage of 20.7.

As summarized by Frank,<sup>2</sup> the following ideas are generally held by gynecologists: (a) the fountain-head focus is in the cervix; (b) the next most important focus is in the urethra (Skene's ducts and paraurethral ducts) which is lined by resistant stratified squamous or transitional epithelium; (c) the vagina, during the reproductive period, suffers only transiently; and (d) the upper part of the genital tract tends to resolve itself of infection if relieved of the reinfection and constant drainage from the lower part of the genital tract.

Positive diagnosis in this series was based on smears with gram-negative intracellular diplococci having the morphology of the gonococcus, in addition to objective clinical signs. While not taken as diagnostic, extracellular gram-negative diplococci were considered as suspicious, and no patient was discharged as recovered who had such organisms in the smears. In order to discharge a patient as cured, 4 consecutive smears negative for both intra- and extracellular gram-negative diplococci obtained at intervals of 2 weeks and absence of objective clinical signs were required. Thus each patient was observed 2 months for recurrences.

In August 1933 the direction of this particular phase of venereal disease work was put in the hands of a gynecologist. Treatment on the basis of creation of local reaction and drainage with the omission of antiseptics was begun as follows: (a) all cervixes with cervical glands functioning were cauterized one or more times

with the electrocautery at intervals of 2 or more months in order to cause local reaction and to give better drainage of the active focus;<sup>3</sup> (b) urethral meatus and cervix were treated weekly with applicators saturated with 25 per cent silver nitrate (considered a local irritant, not an antiseptic, in this strength) in order to cause local reaction and to favor better drainage; (c) douches of 1½ per cent acetic acid (vinegar or physiologic) were taken by the patient at home



twice daily by means of a fountain syringe until the cervix was healed and by means of a pressure syringe (bulb type) after the cervix was healed.

The ages of the patients ranged from a few weeks to 60 years, the average being 19 years. Approximately one half had syphilis which was under active treatment. The largest number of cauterizations upon a single patient was 5, the smallest 1, and the average 2. Some cases which had resisted treatment by antiseptics for as long as 4 years were cured within 1 year by the creation of local reaction and drainage. No patient who coöperated failed to be cured.

Complications such as pelvic peritonitis and hemorrhage were at times severe but at no time dangerous; and these did not develop often.



Patients were prepared for these reactions by a thorough explanation of what was being done, why, and what was to be expected. Occasional incomplete stenosis of the cervix developed as was expected but no cases of hematometra. One abortion occurred in an early pregnancy which was not diagnosed at the time of electrocauterization of the cervix, but good recovery resulted.

The accompanying chart shows the effect of this form of therapy since 1933 and a comparison with the two preceding years.

## PROBLEMS CONFRONTED IN THE TREATMENT OF OXYURIASIS\*

HENRY A. MONAT, M.D., *Washington*

The difficulty in the treatment of oxyuriasis lies in the two not definitely clarified problems, namely, the duration of the life cycle of the pinworm and the method of dislodging the adult pinworms which are lodged in the appendix.

If we knew definitely the duration of the life cycle of a pinworm, we might observe the patient for a certain period of time and by examining the perianal region with a National Institute of Health swab<sup>1</sup> (NIH swab consists of a glass rod with a cellophane tip held by a rubber band) at the time when the supposed adult pinworm migrated toward the rectum, the treatment then would not present much difficulty provided other sanitary and therapeutic measures were followed.

The eradication of the adult pinworm from the appendix presents a difficult problem.<sup>2, 3</sup> I have found a suggestion by S. E. Grant,<sup>4</sup> to quote, "satisfactory and quick results have been gotten by through and through medicated or saline irrigations following appendicostomy or cecostomy." Such a procedure, in my opinion, is too radical and unwarranted in oxyuriasis.

Although the treatment of oxyuriasis is one

## CONCLUSIONS

1. Antiseptics should be abandoned in the treatment of gonorrhea in females.

2. Cure lies in a physiologic-pathologic approach and consists mainly in the creation of local reaction and drainage.

## BIBLIOGRAPHY

1. NOTES, B.: Routine Treatment of Gonorrhea in Females. *Am. J. Obst. & Gynec.*, 1935, 30, 121.
2. FRANK, R. T.: *Gynecological and Obstetrical Pathology*, 2nd ed. New York, D. Appleton-Century, 1931.
3. NOTES, B.: Electrocauterization of Cervix in Children. *J. A. M. A.*, 1933, 100, 1103.

of the most disappointing among worm infestations, its symptoms and lesions are very benign. Out of 20 school children of known pinworm families<sup>5, 6</sup> only 1 complained of occasional pruritus ani. In none of them was there a parallelism between their infestation and school progress.

To show how disappointing at times is even a most controlled and persistent treatment, I cite the following case:

Miss M., aged 25 years, who came in on August 1, 1938, complaining of pruritus ani, insomnia, nightmares and exhaustion, was found to have a mixed infestation with hookworm and pinworm and severe secondary anemia. She was given a combined treatment of san-tonin in the evening followed by chenopodium in the morning. This treatment was repeated twice in 2-week intervals. On October 17, 1938, approximately 6 weeks later, she repeated the treatment, although the stools were free of hookworm eggs and the perianal region clear of pinworm eggs. The patient felt fine at that time and had gained about 12 pounds. On October 24, 1938, a week after the last treatment, she complained of pruritus ani and brought to the office a gravid female oxyuris. Needless to say that the only explanation of failure was that she had adult pinworms lodged in the appendix which could not have been reached by the anthelmintics. She was then given medicated high enemas 3 times weekly for a period of 1 month and until now she is clear of symptoms.

\* Submitted to the Chief of the District School Health Service as a report on the oxyuriasis infestation in the Southeast Public Schools of Washington, D. C.



It is suggested that the following routine procedure be followed in all suspected and proven cases of oxyuriasis:

1. The perianal region should be swabbed with an NIH swab and examined for pinworm eggs before and after completion of treatment.
2. The patient and his family should be instructed as follows:
  - a. The clothing and bedding of infected persons are likely to contain eggs in large numbers and should be sterilized.
  - b. All food utensils should be sterilized.
  - c. The toilet seat should be wiped off with a cloth dipped in lysol solution after each defecation.
  - d. The hands should be washed with soap after each defecation and before each meal.
  - e. The infested person must sleep with mittens on his hands.
3. The patient must be instructed to cut his finger nails short and apply 30 per cent mercurial ointment to his fingers, anus and perianal region at night and in the morning. He must change his underwear daily.

As to curative therapeusis, the established procedure in my office is as follows:

First day: Diet—liquids for lunch and dinner.

At 6 p.m. The following medication:

R̄ Santonin gr iii  
Calomel gr ii  
Hyoscyamus gr i

Second day: Diet—no breakfast, light lunch.

At 6 a.m. Oil of chenopodium in double hard gelatin capsules mXV.

At 7 a.m. Repeat above

At 8 a.m. Repeat above

At 10 a.m. Magnesium sulfate oz. ii

Third day: Diet—regular.

At 3 p.m. a high enema with 1½ quarts of warm water, 2 ounces of sodium bicarbonate, 2 grains of potassium permanganate and a few crystals of menthol. The enema is given with the patient in the prone left oblique position with legs flexed; then the patient is rolled out flat and placed in the right oblique position with the hands gently massaging the colon toward the cecum. The enema is allowed to be

retained from 20 to 30 minutes. The procedure is repeated 3 times a week for 4 to 6 weeks. At the end of 6 weeks it is wise to repeat the santonin-chenopodium régime.

No patient is to be considered free of infestation in less than 2 months.

Drs. Eloise Cram, W. H. Wright, F. J. Brady and John Bozicevich<sup>2, 7</sup> have made a preliminary report on the therapy of pinworm infestations with gentian violet which promises to be the most easily administered drug. As to the efficacy of this treatment, only controlled studies will enable us to determine whether it should replace the use of the older anthelmintics and medicated enemas in the treatment of oxyuriasis. The authors administer 2½ grain enteric-coated pills of gentian violet before meals 3 times a day for 10 days. The course may be repeated if eggs are present after the first course. They report so far very excellent results.

#### SUMMARY

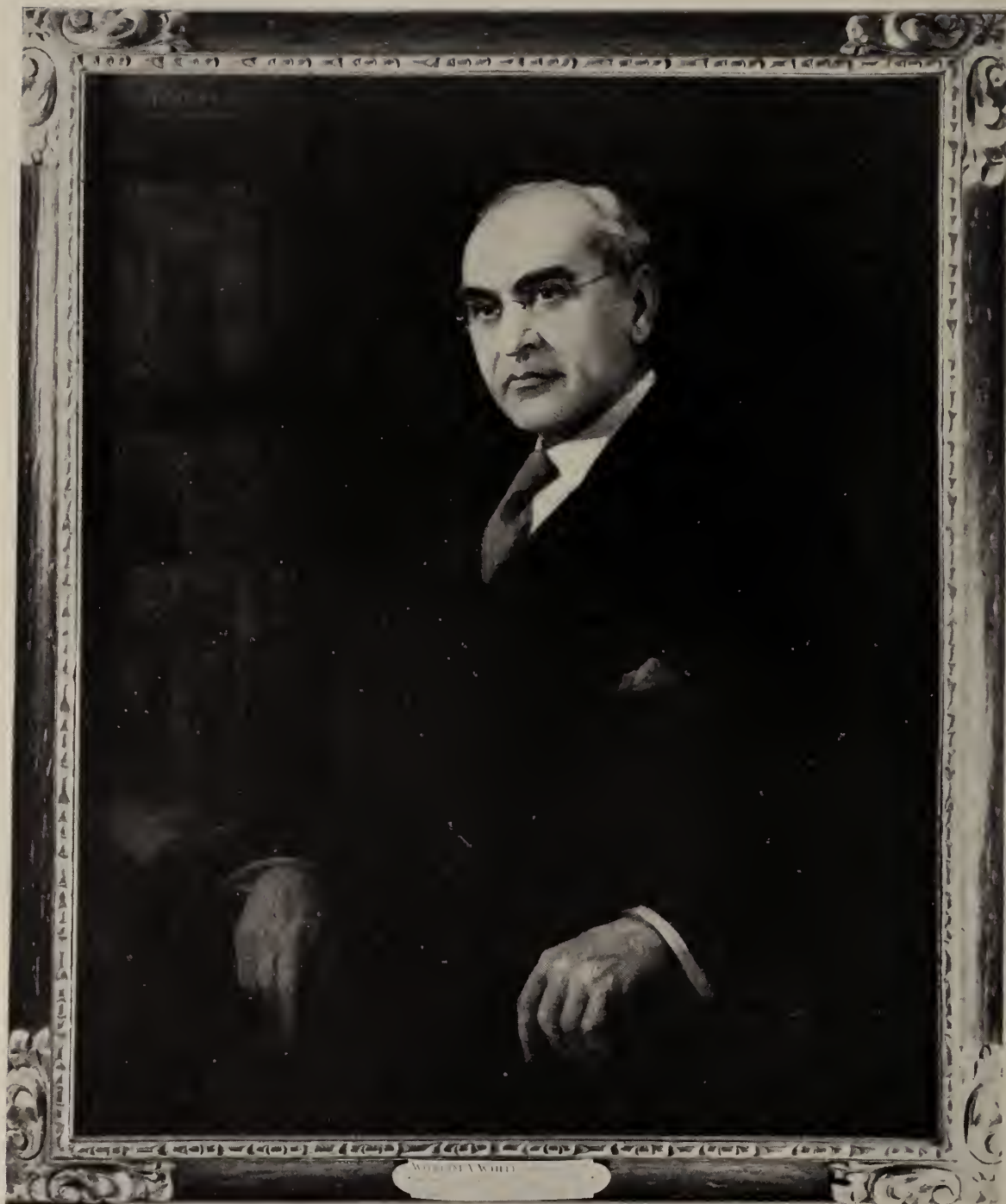
1. Persistence and only persistence in following scrupulously sanitary, educational and therapeutic precautions are the only guarantees for a complete eradication of oxyuris infestation.

2. The symptomatology, pathology and the effect on educational progress is minimal when compared with the difficulty in treatment.

3. The treatment consists of individual and home sanitation, and the administration of anthelmintics and properly administered enemas over a period of at least 6 to 8 weeks.

#### BIBLIOGRAPHY

1. HALL, M. H.: Studies on Oxyuriasis. *Am. J. Trop. Med.*, 1937, 17, 445.
2. WRIGHT, W. H., AND CRAM, E. B.: Studies on Oxyuriasis. *Am. J. Dis. Child.*, 1937, 54, 1276.
3. TICE, F.: Practice of Medicine. Hagerstown, Md., Prior, 5, 170.
4. GRANT, S. E.: Diarrheal, Inflammatory and Parasitic Intestinal Diseases. Philadelphia, Saunders, 1915.
5. BOZICEVICH, J., AND BRADY, F. J.: Studies on Oxyuriasis. *M. Ann. District of Columbia*, 1938, 7, 187.
6. BOZICEVICH, J.: Studies on Oxyuriasis. *M. Ann. District of Columbia*, 1937, 6, 239.
7. WRIGHT, W. H., BRADY, F. J., AND BOZICEVICH, J.: Studies on Oxyuriasis. *Proc. Helminthological Soc. of Washington*, January, 1938.



William Alanson White, M.D., Sc.D., LL.D.

Born 1870--Died 1937

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# MEDICAL ANNALS

of the

## DISTRICT OF COLUMBIA

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### THE PRESIDENT'S MESSAGE

#### CONSERVATION

"The evil that men do lives after them;  
The good is often interred with their bones."

This pessimistic opinion, doubtless, is true within a group dominated by individualistic thought and action; but society has reacted to this menacing trend, so frustrating to human progress, by developing a protective and conserving mechanism: The Institution.

In The Institution it has devised instruments or agencies for extending and perpetuating the socially useful attributes of individual men and incorporating these into its structure for service to the whole group, rather than to the single individual.

Man has transformed his environment until it is exceedingly complex in structure and delicate in adjustment, and step by step, with this change, he has become less competent to function alone and increasingly dependent upon the preservation of the structure he has raised.

However, man's personal desires are as urgent now as they ever were in the more primitive stages of his development, and from time to time, if uncontrolled, they will lead him to pervert the function and jeopardize the structure of a delicate instrument, such as The Institution is, by utilizing it in reaching for individual goals or for personal service, each one seeking his own and thus frustrating all.

In order to obviate this danger there has been

devised the representative custodianship, that is, a chosen individual, or a small group of individuals, selected and elected to act in the larger interest of all concerned, in a word, representative government.

Not through control by clamor, use by preference, or direction by personal desire, but by careful conservation of all-inclusive interests, sustained effort toward improvement and considered decision in the presence of dangerous conflict, institutions are preserved and social advancement accomplished.

"Choose ye then such men as have in them a good spirit, without guile; even such as are cunning in knowledge, wise in council, and have understanding of hard sayings; fit and able to stand before kings."

WILLIAM J. MALLORY, M.D.

### UNVEILING OF PORTRAIT OF DOCTOR WILLIAM ALANSON WHITE

On January 31, 1939, a portrait of one of the most distinguished deceased members of the Society, a reproduction of which appears in this issue of the Annals, was formally presented to Saint Elizabeths Hospital with befitting ceremony. The portrait was painted from a photograph by Henry R. Rittenberg upon commission by a group of friends of Dr. White. Dr. Winfred Overholser, Dr. White's successor as Superintendent of Saint Elizabeths Hospital, presided at the ceremony. Reverend Ulysses G. B. Pierce, D.D., President of the Board of Visitors, made the presentation address. Honorable Harold L. Ickes, Secretary of the Interior, made the address of acceptance. At the same ceremony Dr. White's personal library was offered as a gift to the Hospital by Mrs. White and formally accepted. This valuable collection of books relating largely to psychiatry will be suitably housed and maintained as the William A. White Memorial Collection.

Dr. White, who died recently, was Superintendent of Saint Elizabeths Hospital for the insane for thirty-four years. He was internationally known as a great writer and teacher of psychiatry. His personality was most lov-



able and attractive, his teaching most erudite and lucid.

“...ONE-THIRD OF A NATION...”

No one has a deeper sympathy for mankind than the conscientious physician. A counselor and friend to the sick, he has acquired an intimate knowledge of human nature. He knows as no one else does the tragedies of many lives. He fills a rôle that no one else can in the struggle against disease. It is difficult, therefore, for him to account for the aspersions which of late have been cast upon the medical profession by persons who either unthinkingly or maliciously charge doctors with being chiefly concerned with their own selfish interests. Often he has become embittered because of the injustices of the accusations made against him. As a result he has been reluctant to raise his voice in protest or even to offer what he believes are constructive suggestions in regard to health. He is certain that they will be received with cynicism.

Some months ago an eminent physician made the suggestion that good food and proper housing for the “one-third of a nation” who are in need should take precedence over all other necessities, including medical care. Promptly the medical profession was charged with being opposed to progress and endeavoring to divert public attention from the need for medical services.

This incident came to mind the other evening when we happened in on a meeting of citizens in a suburban community near Washington. As we entered the hall where the meeting was being held, a public health nurse was describing the health conditions which existed in the city and it was a most unpleasant picture. She pleaded with the organization to aid health officials to do something about the housing situation, stating that in a certain block in the city there was only one water faucet. As many as nine persons, she said, were living in a single room. Obviously, sanitary conditions in this section of the city were deplorable. Where there was contagious or infectious diseases iso-

lation of patients was, of course, impossible. This combined with the bad sanitary conditions made medical care in many instances of little value.

This is not an unusual situation. Similar conditions are to be found in any number of cities throughout the country. Despite Government spending, thousands of our citizens live in unbelievably bad surroundings.

Far from being unsympathetic with the underprivileged of our population, the medical profession feels deeply for it. However, physicians are realistic, recognizing that necessities of life must be provided in a common sense manner. We should list them in the following order: first, and most important, an opportunity to work; second, proper and nourishing food; third, adequate housing facilities; fourth and finally, good medical care. The people of this country can be assured that so far as the medical profession is concerned it will see to it that the health needs of all the people are cared for. However, as has been pointed out, the essentials of good health are not limited to medical care but require decent living conditions.

## KEEPING ABREAST OF SCIENTIFIC PROGRESS

Demands made upon the modern doctor are so numerous and varied that he finds little time for reflection and study. When the opportunity does present itself he soon discovers the magnitude of the task of keeping himself well informed on scientific matters, even though he limits his efforts to his own particular field.

Fortunately, opportunities for gaining scientific knowledge are readily accessible if the physician sincerely desires to improve himself. Of course, it is true that in some communities better educational facilities are available than in others. Here in Washington we have the finest medical libraries in the country. In addition, there are numerous scientific bodies, many of whose meetings any physician can attend.

For example, this month the Annual Scientific Assembly of The Medical Society of the District of Columbia will be held at the Mayflower

Hotel. An exceedingly interesting and informative program has been planned in the form of a practical Postgraduate Course in Gastroenterology. Many important names appear among the instructors and three full days will be devoted to the presentation of various phases of the subject. The course is an undertaking of unusual magnitude, and enthusiastic response on the part of the membership and physicians from nearby states who have been invited is expected.

We should not need to urge in these columns that the Assembly this year is one of which every member of the Society should take advantage. If the 1939 Assembly is as successful as it deserves to be, future Committees on Arrangements will gladly put forth every effort to provide the best that can be procured for the enlightenment of the medical profession of this community, thereby keeping physicians of Washington abreast of scientific progress.

#### PERTINENT PARAGRAPHS

Examinations of youths connected with National Youth Administration and employed on W.P.A. projects were completed by members of the Society volunteering for this purpose on March 21, 1939. Clinics have been conducted weekly for the past month at the following hospitals: Gallinger Municipal, Garfield Memorial, Georgetown University, and Sibley Memorial. One hundred and eighty-seven youths were examined, of which 93 were boys and 94 girls. Where defects were found, recommendations were made by examining physicians. All of these youths are, of course, eligible for treatment in free dispensaries and clinics, and will be referred to the Central Admitting Bureau to Hospitals.

The Medical Society wishes to acknowledge its indebtedness to the physicians who made this project possible. They are listed here according to institutions in which they served.

Gallinger Hospital: Dr. A. Fife Heath, physician-in-charge, Drs. Herbert S. Gates, William B. Marbury.

Garfield Hospital: Dr. Harry B. Orleans,

physician-in-charge, and Drs. C. G. Aronstein, Samuel Benjamin, Eugene A. Taylor, Francis D. Threadgill, Darrell C. Crain, W. Dabney Jarman, Clapham P. King, Samuel E. Watkins, Elma B. Carr, Thomas A. Claytor, A. Frances Foye, Alma Jane Spear.

Georgetown University Hospital: Dr. John D. Wynkoop, physician-in-charge, and Drs. F. Scott Avery, Frank S. Horvath, Leo B. Norris, Philip A. Caulfield, J. J. McHale, H. H. Strine, Paul N. Taylor, Edward C. Morse, Henry B. Gwynn.

Sibley Memorial Hospital: Dr. Duane C. Richtmeyer, physician-in-charge, and Drs. Robert J. Bosworth, Walter W. Price, F. V. Atkinson, E. E. Ellison, R. L. Spire, A. M. Wheeler.

Thanks are also due the hospitals who made their facilities available.

The project was undertaken at the request of Mrs. Beatrice Rudes, Assistant Director, National Youth Administration of the District of Columbia, with the approval of the Committee on Public Health, the Executive Board, and the Society.

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The Cancer Control Campaign got under way on April 1. Speakers who will appear before lay audiences are to be provided by the Committee on Public Relations' Speaker's Bureau. Prior to the inauguration of the Campaign, a meeting of the speakers was held at the Medical Building. The manner of presenting the subject of cancer prevention and control was discussed. The group was addressed by Colonel Eugene R. Whitmore, Chairman of the Executive Committee of the Women's Field Army of the District of Columbia, Dr. A. H. Estabrook of the American Society for the Control of Cancer, and Dr. H. S. Hoffman, a member of the Public Relations Committee.

Members of the Executive Committee of the Army were appointed by the President and have been confirmed by the Medical Society. They are: Dr. Eugene R. Whitmore, Chairman, Drs. Edith SeVille Coale, Harry H. Kerr, Rad-



ford Brown, William J. Stanton, Daniel L. Seckinger; ex officio members, Dr. Melvin Price Isaminger and Mr. Theodore Wiprud. Mrs. Lloyd Biddle is the District Commander.

Although the Campaign concludes at the end of April, the educational program is to be permanent.

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Preliminary programs for the Annual Scientific Assembly, together with registration cards, were mailed to 1,500 physicians in nearby states on March 18. Returns are being received at the Society's Office. The registration fee for non-members is \$3.00. This fee entitles the physician to attend sessions in connection with the Postgraduate Course in Gastroenterology and to attend the luncheon to be held on Tuesday, April 25.

The program for the Assembly, which appears elsewhere in this issue, discloses that an unusually attractive meeting is in store for those who attend. The Subcommittee on Program has spared no effort to obtain the best instructors possible for its postgraduate course. Similarly, subcommittees charged with responsibility for exhibits, entertainment, printing, attendance, publicity, banquet, finance, luncheon, woman's auxiliary liaison, associates, women physicians and public meetings have made ambitious plans.

All of the subcommittees making up the Committee on Arrangements have really shown unusual interest and enthusiasm this year, which is in no small degree a tribute to the able leadership of Dr. James A. Gannon, General Chairman.

---

Those who are acquainted with the literary gifts of Dr. William J. Mallory are looking forward to his Presidential Address, which is to be given on April 19. The address bears the intriguing title, "Orientation." Worthwhile ideas, good humor, and charm are expected qualities in Dr. Mallory's speeches, and he never fails to live up to the expectations of his listeners.

Not of least importance on this occasion will be the presence of wives of Society members and the buffet supper to follow.

A flood of novels and autobiographies by and about physicians have been published in the past two or three years. Many of the authors of these books are sincere, able, and have a worthwhile story to tell. A fine example of this group of writers is Dr. Arthur E. Hertzler of the "Horse and Buggy Doctor" fame, who was recently in Washington. Some, however, have obviously been written to attract attention to the writer. These contributions more often than not have little literary or other value. A few physicians have taken advantage of the sympathetic attitude of the present Administration toward compulsory insurance, and have theorized on how such a system would benefit the people of this country.

We would hazard the guess that public interest in medical matters will soon wane. Especially is this true as regards novels. In the meantime the not overly sincere medico-author is helping to discredit his profession. Not that the profession should not be criticized for its errors, but there is good taste in such matters which the honest physician will observe.

#### THE HEALTH BILL\*

Though Senator Wagner's National Health Bill must be regarded as a sincere effort to reform the present inadequate method of caring medically for that part of the population which cannot afford protracted sickness, it is the conception not of medical scientists but of Government officials who evidently imagine that existing agencies have only to be enlarged in order to cope with the problem presented. For example, the Treasury Department, the Department of Labor and the Social Security Board would be entrusted with the proper distribution of medical care, and this for no other reason than that they now render some medical service through special offices. These three agencies are directed by laymen. True, the bill would give them authority to appoint at least five medical advisory boards, but they are under no compulsion to accept technical advice. The State

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\* Editorial from The New York Times, March 12, 1939.



that petitions Washington for financial aid in carrying out its medical program must therefore deal with eight bodies. If it submits a plan of medical care that satisfies its own health department, the funds requested must be granted no matter how low the standards set, leaving the advisory boards in a foolish position.

Possibly this difficulty will be removed if the Reorganization Bill now before Congress becomes a law in its present form; for it would give the President power to coördinate bureaus that perform similar tasks and enable him to create a single, efficient body of health administrators. If the Reorganization Bill fails him in this respect it will be the clear duty of Congress to simplify the administrative procedure now called for by the Health Bill, do away with impotent advisory boards and vest the authority both to spend money and to set up proper medical standards in a body composed of lay officials and physicians.

Even if Senator Wagner is fully aware of these defects and intends to correct them there remains the far more important need of a unifying policy. Not the health of the nation as a whole has been considered, but the specific needs of mothers, children, the mentally afflicted, the tuberculous and others who fall naturally under the jurisdiction of present Government health agencies. No attempt has been made to envision the medical needs of communities and to correlate the provisions for meeting them. Apparently each head of a Government health agency recommended expenditures which would permit him to cope on a larger scale with the particular aspect of medicine that had been his past concern.

Obviously we need a scientific medical policy framed by experts, a policy which will recognize community needs rather than special groups of sufferers and the imperative duty to improve medical care, lower its cost and thus bring it to more and more people. Health is not achieved merely by spending money. Like victory in war—and we are about to wage war against disease—it must be fought for in accordance with a well-rounded, carefully weighed, strate-

gic and tactical plan to make new techniques and knowledge available after they have been approved.

## TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The regular meeting of the Washington Society of Pathologists was called to order by the President, Dr. J. W. Lindsay, at 1:40 p.m., Saturday, February 4, 1939. Twenty-nine members and 2 guests were present.

### *Presentation of Cases*

**Dr. T. L. Perrin** presented 25 microscopic slides from the case of a 59-year-old white man who for 2 years had had symptoms of a gastric ulcer. Vomiting, tarry stools, flatulence, discomfort after eating, and weakness were the chief complaints. Blood studies revealed no anemia and a leukocytosis of 18,500 with 84 per cent polymorphonuclear neutrophils. Fluoroscopic examination showed a rather extensive irregular filling defect involving the pylorus which appeared to be a chronic perforating ulcer. At operation an indurated mass 2 to 3 cm. in diameter on the lesser curvature of the stomach was found. The spleen was twice its normal size. Microscopic examination showed extensive replacement and infiltration of variable portions of the stomach wall by masses of large and small lymphoid cells presenting numerous mitoses. The proliferating cells were supported on a connective tissue stroma of variable density, which in general was rather light and was often obscured by the cell masses. A variable amount of reticulum was present. The mucosa and submucosa were extensively infiltrated and there was superficial ulceration and necrosis. The remaining glands were somewhat enlarged and irregular. The lower muscularis and serosa were variably infiltrated by tumor. Granulomatous foci with epithelioids and giant cells were present.

In the discussion small-celled carcinoma, lymphatic tumors and Hodgkin's disease were considered.

**Dr. Walter Freeman** presented 35 microscopic slides from the case of a 6-year-old white boy (L.N. 408) who several months ago developed headache and vomiting which became rapidly worse and were followed by blindness. Mental dullness, sensitivity, stiff neck and positive Kernig's sign, choked discs, bilateral external strabismus, ankle clonus on the right, and a positive Babinski sign on the left were found at examination. X-ray studies showed a thinning of the skull with cortical markings anteriorly and a large, partially calcified mass occupying the right anterior horn and body of the ventricle, some calcification in the frontal area, hydrocephalus and marked increase in pressure. Death followed attempted surgical removal of mass.

Pathologic examination of the brain revealed a firm tumor 7 by 4 cm. which sprang from the vicinity of the foramen of Monro making a large nest for itself in the anterior horn of

the right ventricle. Small nodules were found along the taenia thalami. On the surface of the brain firm whitish nodules that were poorly defined and paler than the neighboring cortex and sometimes umbilicated were associated with hypertrophy of the convolutions. Microscopic examination showed a tumor consisting of large polyhedral cells with large nucleolated nuclei and relatively little intercellular substance. Marked gliosis, disturbance in architecture, large undifferentiated cells and many enormously enlarged nerve cells were present in the cortical nodes. This case of tuberous sclerosis is exceptional in showing the very large development of one of the intraventricular tumors with apparent blocking of the foramen of Monro.

In the discussion it was noted that the large polyhedral cells of the tumor seemed to be midway between ganglion and glial cells and that the condition might be termed a ganglioma. Although such cases are mentally defective the condition sometimes appears in adults.

**Dr. Wm. L. Vogt and Dr. J. W. Lindsay** presented 30 microscopic slides from the case of a 25-year-old white man who for 2 months had had pain in the left arm. For the last 2 weeks a lump appeared low on the left side of the neck making swallowing of food difficult. Prominence of the eyes, dimness of vision and a smaller pupil appeared in the left eye about the same time. Physical examination showed a hydrothorax on the left side, diminished force and volume of the pulse in the left arm and Horner's syndrome. Microscopic examination showed areas of necrosis and plaques of polyhedral cells with large nucleoli. Scattered through the tissue were groups of very large cells with irregular, striking, hydrochromatic nuclei of bizarre pattern. In the cytoplasm of some of the large, architectural-shaped nuclei there were fibrils resembling skeletal muscle.

In the discussion the origin of the syndrome of superior sulcus tumor was discussed. Rhabdomyosarcoma, carcinoma of the lung and sympathicoblastoma were considered.

**Dr. H. L. Wollenweber** presented 30 slides from a case of a 42-year-old white man who 3 years ago developed enlargement without tenderness of the lymph-nodes on the left side of the neck. The glands became larger. One year ago some nodes were removed and radium therapy was given, immediately following which he was troubled with diarrhea which lasted 6 months. Recently he was admitted to the hospital with a diagnosis of carcinoma of the stomach. X-ray examination revealed an abnormal round shadow beneath the left sternoclavicular joint. At operation a chain of lymph-nodes were removed from the left side of the trachea, many appearing quite vascular.

In the discussion, the peritheliomatous arrangement of epithelial cells composing the tumor was emphasized. Carotid body tumor, carcinoma of the lung and hemangiosarcoma were considered.

**Lt. Col. J. E. Ash** presented 30 slides from the case of a 41-year-old man who had had a slowly growing tumor below the right parotid gland for about 9 years. There has been no evidence of recurrence in the 9 years since removal. Grossly, it was an encapsulated nodule 3.5 by 2 by 2 cm.

In the discussion Colonel Ash pointed out that these tumors are thought to arise from the anlage of the eustachian tube. They show spaces lined by cuboidal epithelium which is surrounded by a heavy lymphoid stroma. The condition was first named by Warthin, papillary cystadenoma lymphomatosis. Some investigators consider that the tumors arise from the primary optic vesicle.

**Dr. Oscar B. Hunter** presented microscopic slides from the case of a 74-year-old white woman who entered the hospital complaining of a firm painful mass on the left buttock which had been present for 8 months. She has diabetes which is easily controlled with diet. The mass has increased in size and become painful to palpation. The skin over the area is blue and discolored.

In the discussion the tumor was thought to be definitely malignant, of round-cell sarcomatous structure, and of as yet undetermined origin.

**Dr. Vincent J. Dardinski** presented slides of a cystic mass found at operation below the bifurcation of the aorta, extending over the sacrum. The slides revealed rounded basophilic bodies with concentric lamellae suggestive of psammoma bodies. The ovaries were thought to be normal.

In the discussion it was noted that the tissue appeared granulomatous and the bodies were suggestive of torulosis.

**Captain Elbert DeCoursey** presented a section from the eye of a 22-year-old negro of Memphis, Tennessee. For 4 months the eye had shown increasing inflammation that resulted in a fungating granulomatous mass and rupture of the eyeball. The slide shows within the vitreous a granulomatous inflammation with numerous macrophages filled with rather large round bodies presenting a central basophilic nucleus and a wide, pale, sharply delimited halo suggesting a capsule.

Captain DeCoursey presented a second case from the files of the Society. This case had been presented in November 1938 as autopsy material from the case of an 11-month-old baby who had had a 6 months' illness with anemia, leukopenia and enlarged liver and spleen. Microscopic slides of the organs showed numerous leishmaniform bodies in the reticulo-endothelial cells and in parenchymal cells of the internal organs. These small intracellular bodies on closer examination revealed no blepharoplasts and were similar to Histoplasma capsulation.

Captain DeCoursey presented a third slide of a femur of a rat which had been experimentally infected with the fungus causing the disease, "Histoplasmosis of Darling," and suggested that the first two cases might also be histoplasmosis.

In the discussion it was noted that the bodies in the second case looked like those in the rat femur but that those of the first case were much larger.

The meeting adjourned at 3:50 p.m.

# ANNUAL SCIENTIFIC ASSEMBLY OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

HOTEL MAYFLOWER, WASHINGTON

APRIL 25, 26, 27, 1939

The 1939 Annual Scientific Assembly will be the most ambitious yet undertaken by The Medical Society of the District of Columbia. Outstanding physicians of national reputation together with local practitioners will conduct a three-day Practical Postgraduate Course in Gastroenterology. The detailed scientific program is set forth on the following pages.

In addition to the scientific program there will be the following educational and social events:

Tuesday, April 25

12:15-1:45 p.m. Luncheon—Grand Ball Room, Mayflower Hotel. Constantine Brown, noted foreign correspondent, will speak on the European situation. All physicians registering will be provided free tickets.

6:30 p.m. Women's Medical Society Dinner—Jefferson Room, Mayflower Hotel. All medical women registrants are invited as guests. Send acceptances to Dr. Kate B. Karpeles, 3549 16th St., N.W.

9:15 p.m. (following scientific program) Stag Smoker—Italian Garden, Mayflower Hotel.

Wednesday, April 26

10:00 a.m. Woman's Auxiliary Sightseeing Trip. Start from Medical Society Building, 1718 M St., N.W. Those desiring to go must register

before 5 p.m. the evening before at the Registration Desk, Mayflower Hotel.

12:15-1:45 p.m. George Washington University School of Medicine Alumni Luncheon. Ball Room, Mayflower Hotel. Tickets, \$1.25.

1:00 p.m. Woman's Auxiliary Luncheon. Washington Golf and Country Club.

8:00-9:00 p.m. Public Meeting. Grand Ball Room, Mayflower Hotel. Subject: "This Our Oath." Speaker: James C. Sargent, M.D., F.A.C.S., Clinical Professor of Urology, Marquette University School of Medicine, Milwaukee.

Thursday, April 27

12:30-1:45 p.m. Georgetown University School of Medicine Alumni Luncheon. East Room, Mayflower Hotel. Tickets, \$1.50.

7:30 p.m. Annual Banquet. Grand Ball Room Mayflower Hotel. Brilliant entertainment. Wives and guests invited. Tickets, \$3.00 each.

The Registration Desk will be located at the end of the Promenade near the Scientific Exhibit. Registration will begin at 9:00 a.m., Tuesday, April 25, 1939. All who register prior to 11:00 a.m. will be given a ticket to the Tuesday luncheon. Tickets can also be purchased for the Smoker and for the Annual Banquet when registering. Programs are obtainable at the Registration Desk.

## POSTGRADUATE COURSE IN GASTROENTEROLOGY

ALL SESSIONS IN EAST ROOM, MAYFLOWER HOTEL

### FIRST DAY—TUESDAY, APRIL 25

#### MORNING SESSION

##### I. FUNDAMENTALS RELATING TO GASTROENTEROLOGY

9:00 1. Anatomy; Embryology. Othmar Solnitzky, M.D.

9:15 2. Physiology. E. C. Albritton, M.D.

9:30 3. Developmental Anomalies: Clinical Importance in Infants and Children. Charles A. Millwater, M.D.

##### II. DIAGNOSTIC PROCEDURES IN GASTROENTEROLOGY

9:45

1. History-Taking and Physical Examination (illustrated by citations from records). William Ballinger, M.D., F.A.C.P.

2. Use of Special Instruments for Visual Examination.

10:05

a. Endoscopy (Straight Tube). David Davis, M.D.

10:15

b. Gastroscopy. Fred A. J. Geier, M.D.

10:30

c. Peritoneoscopy. J. Russell Verbyck, Jr., M.D., F.A.C.P.



10:45 d. Proctosigmoidoscopy. Benjamin F. Dean, Jr., M.D., F.A.C.S.

11:00 RECESS TO VIEW EXHIBITS

3. Functional Tests, Their Evaluation

11:15 a. Stomach. Leo T. Brown, M.D.

11:25 b. Gall Bladder. John A. Reed, M.D., F.A.C.P.

11:35 c. Liver; Pancreas. Oscar B. Hunter, M.D., F.A.C.P.

11:55 RECESS

# AFTERNOON SESSION

## 4. Roentgenologic Examination

2:00 a. The Rôle of X-Ray in Roentgenologic Diagnosis of Gastrointestinal Tract.

b. Interpretation of Plates. Alexander Berkeley Moore, M.D., F.A.C.P.

2:30 c. Correlation of X-Ray with Gastroscopy. Joseph F. Elward, M.D.

## 5. Laboratory Methods

2:45 a. Practical Office Methods for the General Practitioner. Henry B. Gwynn, M.D.

3:00 b. Blood Chemistry—Indication and Significance in Gastrointestinal Disease. G. Louis Weller, M.D.

## c. Parasitology

3:10 1. Helminth Parasites of Importance in U. S.: Laboratory Methods for Detection. Eloise B. Cram, Ph.D., Senior Zoölogist, National Institute of Health, Washington

3:30 2. Protozoa: Means for Detection and Treatment. Lieutenant Commander Erik G. Hakansson, Medical Corps, U. S. Navy, Naval Medical School, Washington

3:45 III. INTESTINAL HEMORRHAGE AS A PEDIATRIC PROBLEM  
Hugh J. Davis, M.D., F.A.A.P.

4:00 RECESS

# EVENING SESSION

8:00 PROBLEMS IN BILIARY TRACT DISEASE. Martin E. Rehfuß, M.D., F.A.C.P., Clinical Professor of Medicine, Jefferson Medical College, Philadelphia.

## SECOND DAY—WEDNESDAY, APRIL 26

### MORNING SESSION

9:30 I. RELATIONSHIP OF ORAL DISEASES TO GASTROINTESTINAL DYSFUNCTION  
Daniel F. Lynch, D.D.S., F.A.C.D.

9:45 II. DISEASES OF THE ESOPHAGUS AND THEIR MANAGEMENT

P. P. Vinson, M.D., F.A.C.P., Professor of Bronchoscopy, Esophagoscopy and Gastroscopy, Medical College of Virginia, Richmond.

10:15 III. CHRONIC GASTRITIS—RECENT DEVELOPMENTS

R. Lyman Sexton, M.D.

10:45 RECESS TO VIEW EXHIBITS

11:00 IV. PEPTIC ULCER (Panel Discussion)

William Gerry Morgan, M.D., F.A.C.P., Chairman

1. General Considerations: Etiology, Morbid Anatomy and Diagnosis. Camp Stanley, M.D., F.A.C.S.

2. Treatment, Including Discussion of Types Amenable to Medical and Surgical Management. J. Russell Verbrycke, Jr., M.D., F.A.C.P.

3. Special Situation in Children. Coursen B. Conklin, M.D., F.A.C.P., F.A.A.P.

12:00 RECESS

### AFTERNOON SESSION

2:00 V. DISEASES OF THE GALL BLADDER: PRACTICAL CONSIDERATIONS, SURGICAL AND MEDICAL TREATMENT

B. B. Vincent Lyon, M.D., F.A.C.P., Associate Professor of Medicine, Jefferson Medical College, Philadelphia

## VI. JAUNDICE

2:30 1. General Considerations and Differential Diagnosis. Wallace M. Yater, M.D., F.A.C.P.

2:50 2. Jaundice in Children. Charles A. Schut, M.D.

3:05 3. Surgical Considerations in Treatment. Alec Horwitz, M.D., F.A.C.S.

## VII. DISEASES OF THE PANCREAS

3:25 1. Etiology, Diagnosis and Medical Treatment. Ernest Howard Gaither, M.D., F.A.C.P., Baltimore

3:55 2. Surgical Treatment. Edmund Horgan, M.D., F.A.C.S.

4:10 VIII. CELIAC DISEASE  
Joseph S. Wall, M.D., F.A.A.P.

4:30 RECESS

## THIRD DAY—THURSDAY, APRIL 27

### MORNING SESSION

#### I. INTESTINAL OBSTRUCTION

9:00 Types, Diagnosis and Treatment. Harry H. Kerr, M.D.C.M., F.A.C.S.

#### II. APPENDICITIS

9:20 1. Diagnosis. Paul S. Putzki, M.D., F.A.C.S.

- 9:40 2. Appendicitis as a Pediatric Problem.  
Preston A. McLendon, M.D., F.A.A.P.
- 9:55 RECESS TO VIEW EXHIBITS
- III. COLITIS
- 10:10 1. General Considerations, Diagnostic  
Methods and Treatment: Special Types,  
Diverticulitis, Ulcerative Colitis, etc.  
William Earl Clark, M.D., F.A.C.P.
- 10:40 2. Regional Ileitis and Polyposis. Robert  
J. Coffey, M.D.
- 10:50 3. Dysentery in Children. Harry A. Ong,  
M.D., F.A.A.P.
- 11:05 IV. SURGICAL CONSIDERATIONS OF THE COLON  
—DIAGNOSIS AND TREATMENT  
A. Stephens Graham, M.D., F.A.C.S.,  
Assistant Professor in Surgery, Medical  
College of Virginia, Richmond.
- 11:35 V. SURGICAL CONSIDERATION OF RECTUM AND  
ANUS  
Garnet W. Ault, M.D.
- 11:55 RECESS

#### AFTERNOON SESSION

- 2:00 VI. FUNCTIONAL DISEASES OF GASTROINTESTINAL TRACT (Panel Discussion)  
Llewellys F. Barker, M.D., F.A.C.P.,  
Professor Emeritus of Medicine, Johns  
Hopkins University School of Medicine,  
Baltimore, Chairman

1. The Gastrointestinal Manifestations of  
Allergy—Present-Day Aspects. Leslie  
N. Gay, M.D., Baltimore.
2. Neuroses and Psychoneuroses—View-  
point of Neuropsychiatrist. Solomon  
Katzenelbogen, M.D., F.A.C.P., Direc-  
tor of Laboratories and Research, Saint  
Elizabeths Hospital.
3. Cardiac Disease. Walter A. Bloedorn,  
M.D., F.A.C.P., F.A.C.S.
4. Pregnancy. Prentiss Willson, M.D.
- 3:00 VII. RECENT DEVELOPMENTS IN ENDOCRINOLOGY AND THEIR APPLICATION TO GASTROINTESTINAL DISEASE  
Lewis Marshall Hurxthal, M.D., F.A.C.P.,  
Lahey Clinic, Boston
- 3:30 VIII. RELATIVE VALUE OF VARIOUS THERAPEUTIC MODALITIES (Panel Discussion)  
Wallace M. Yater, M.D., F.A.C.P.,  
Chairman
1. Medicine. Matthew White Perry,  
M.D., F.A.C.P.
2. Surgery. Charles S. White, M.D.,  
F.A.C.S.
3. X-Ray. Ralph Rhett Rathbone, M.D.
4. Physiotherapy. Richard Kovacs, M.D.,  
Clinical Professor of Physical Therapy,  
New York Polyclinic Medical School  
and Hospital, New York City.

#### SCIENTIFIC EXHIBITS

The Scientific Exhibits will be held in the Pan-American Room and the adjoining Parlor at the Mayflower Hotel. There will be twenty-one exhibits as follows:

- HENRY B. GWYNN, M.D., AND JOHN R. CAVANAGH, M.D.: Circulation Time of the Blood
- EDMUND HORGAN, M.D.: Surgical Operations and Surgical Technic
- EUGENE WHITMORE, M.D., GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE: Pathological Exhibit
- WALTER FREEMAN, M.D., AND H. D. SHAPIRO, M.D.: Metrazol and Insulin Shock Treatment of Neuroses and Incipient Psychoses
- W. C. STIRLING, M.D., AND COLONEL J. E. ASH: Sarcoma of the Prostate
- HENRY A. MONAT, M.D.: Digestability of Foods
- JOSEPH HORGAN, M.D.: Common Surgical Conditions of the Colon, Rectum, and Anus (A continuous moving picture. Charts)
- BUREAU OF MATERNAL WELFARE, D. C. HEALTH DEPARTMENT: Problems of Maternal and Child Health in Washington, D. C.
- G. LOUIS WELLER, JR., M.D.: Blood Chmeistry in Gastroenterology
- ROY LYMAN SEXTON, M.D., RICHARD EDGAR DUNKLEY, M.D., AND ALAN FRANK KREGLOW, M.D.: Chronic Gastritis—Its Prevention and Treatment
- LAWRENCE McCALEB, M.D.: Skin Diseases (Colored slides projection)
- FRED. A. J. GEIER, M.D.: Gastroscopy (Photographs taken within the stomach)
- ISIDORE LATTMAN, M.D.: X-Ray Studies of the Gastrointestinal Tract (Stressing the commoner G. I. conditions)
- ISIDORE LATTMAN, M.D.: Cardiovascular Diseases Treated with Modern Physical Methods
- HORATIO NELSON DORMAN, M.D.: Resection of the Prostate (Charts and specimens)
- DAVID DAVIS, M.D.: Bronchoscopy

GRETE LENZ, PH.D., WASHINGTON COUNCIL OF SOCIAL AGENCIES: Research Studies on the Prevalence of Disease in Washington  
 LOUIS H. CLERF, M.D., Philadelphia: Diseases of the Esophagus

READ CALVERT, M.D.: Moving Pictures of the Modified Manchester Technic for Prolapse Uteri  
 UNITED STATES ARMY MEDICAL MUSEUM  
 AMERICAN MEDICAL ASSOCIATION

### TECHNICAL EXHIBITORS

Twenty-four firms will occupy thirty spaces in the Technical Exhibit in the Promenade of the Mayflower Hotel. They are:

Beuchler's  
 Borden Company  
 Paul L. Brand  
 Chestnut Farms-Chevy Chase Dairy  
 Davies, Rose & Co., Ltd.  
 Doak Company, Inc.  
 Gibson Company  
 Horlick's Malted Milk Corporation  
 Jetter & Scheerer Products, Inc.  
 Kloman Instrument Co.  
 Lederle Laboratories  
 Liebel-Flarsheim Co.

J. B. Lippincott Co.  
 Mallinckrodt Chemical Works  
 Maxwell & Tennyson  
 Mead Johnson & Company  
 Peoples Drug Stores  
 Petrolagar Laboratories  
 Philip Morris & Co., Ltd.  
 Riedel—de Haen, Inc.  
 W. B. Saunders Co.  
 E. R. Squibb & Sons  
 Valentine's Meat Juice Co.  
 John Wyeth & Brother, Inc.

### CALENDAR FOR COMING MEETINGS

**Wednesday, April 19:** Presidential Address.

"Orientation," William J. Mallory, M.D.

Wives are invited to attend this meeting. Buffet supper will be served.

**Tuesday, Wednesday, Thursday, April 25, 26, 27:**

Annual Scientific Assembly. See complete program elsewhere in this issue.

**Wednesday, May 3:** Annual Business Meeting. Election of officers, etc.

**Wednesday, May 10:** The Washington Society of Pathologists will sponsor the following program:

Panel Discussion: "Recent Advances in the Anemias"

Mediator: Captain Elbert DeCoursey

Leader: Dr. R. M. Choisser

Participants: Colonel Eugene R. Whitmore, Commander

H. E. Ragle, and Drs. J. W. Lindsay, Lester Neuman,

G. J. Brilmyer, O. B. Hunter.

Questions from the audience will be invited.

### RADIO BROADCASTS

#### *The Medical Society of the District of Columbia*

The Committee on Public Information has released the following program to be presented over Station WMAL, at 10:45 a.m., each Wednesday:

*May 3:* Interviews in connection with International Congress of Medicine and Pharmacy.

*May 10:* Interviews in connection with International Congress of Medicine and Pharmacy.

### NEWS AND PERSONALS

The American Board of Internal Medicine announces that written examinations for certification will be held in various sections of the United States on the third Monday in October and the third Monday in February. Formal application must be received by the Secretary before August 20, 1939, for the October 16, 1939, examination, and on or before January 1 for the February 19, 1940, examination. Application forms may be obtained from Dr. William S. Middleton, Secretary-Treasurer, 1301 University Ave., Madison, Wis.

The American Association for the Study of Goiter will hold its next annual meeting in Cincinnati, Ohio, May 22, 23 and 24, 1939. The program will consist of scientific papers dealing with goiter and other diseases of the thyroid gland, dry clinics conducted by guests of the Association, and operative clinics in the various hospitals in Cincinnati.

The Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland will again be awarded by the Association. This Award will be made at the annual meeting providing essays of sufficient merit are presented in competition.



The competing essays may cover either clinical or research investigations; must be presented in English, not to exceed 3000 words in length; and a typewritten double-spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., not later than April 15, 1939.

**The Association of Military Surgeons of the United States**, an organization nearly 50 years old and composed of commissioned medical officers of the Army, Navy, U. S. Public Health Service, National Guard, Organized Reserves and Veterans Administration, will hold its next annual convention in conjunction with the International Congress of Medicine and Pharmacy at the Willard Hotel in Washington, D. C., May 8, 9 and 10, 1939.

Dr. William J. Mallory, President of the Society, has accepted the invitation of the Association's President, Surgeon General Thomas Parran, to address the convention when it opens its meeting Monday morning, May 8.

**The American Association of Industrial Physicians and Surgeons** will hold its 24th Annual Meeting with the American Conference on Occupational Diseases and Industrial Hygiene in Cleveland, Ohio, at the Hotel Statler, June 5, 6, 7 and 8, 1939. The program will be devoted to medical and engineering problems involved in industrial health, and a cordial invitation is extended to all whose interests bring them in contact with these problems. Information regarding hotel accommodations, etc., may be obtained from A. G. Park, Convention Manager, 540 North Michigan Ave., Chicago, Ill.

**The Salmon Committee on Psychiatry and Mental Hygiene** announces the 1939 Salmon Lectures to be given in The New York Academy of Medicine on April 14, 21 and 28 by Dr. Edward A. Strecker, Professor and Chairman of the Department of Psychiatry in the School of Medicine, University of Pennsylvania. For Lecture I, Dr. Strecker will use for his subject, "The Massive Retreat from Reality"; for Lecture II, "Analysis of 'Crowd-Mindedness'"; Lecture III will discuss the feasibility of social mental hygiene and the significant rôle it must be prepared to play in any plan designed to redeem our cultures.

**The American Association for the Study of Neoplastic Diseases** held its annual meeting in Detroit,

Michigan, at the Hotel Statler, April 6, 7 and 8, 1939. Two local members participated in the meeting. Dr. Janvier W. Lindsay discussed tumors of the chest and neck in the first session on microscopic pathology and later served as session chairman. Dr. Eugene R. Whitmore spoke on "Chronic Cystic Mastitis and Carcinoma of the Breast. Whole Organ Section Studies."

**The American College of Physicians**, at its annual session in New Orleans, March 27-31, 1939, inducted the following physicians from Washington into Fellowship:

John Richard Cavanagh, Samuel Dessoff, Leslie Howson French, Ernest Elvin Hadley, Frank Stephen Horvath, Theodore G. Klumpp, Isidore Lattman, Rear Admiral Ross T. McIntire, Stuart Oliver Foster, Earl Richard Templeton, and G. Louis Weller, Jr.

The following Washington physicians were inducted into Associateship:

Theodore Judson Abernethy, Worth Bagley Daniels, Clayton Bernard Ethridge, Frederick A. J. Geier, and Henry Anatol Monat.

**The 1939 Kober Lecture** was held at Georgetown University, March 28. In accordance with the wishes of the late Dean George E. Kober, the selection of this year's Kober Lecturer was the privilege of the Association of Military Surgeons, whose members accorded this honor to Colonel Joseph F. Siler, U.S.A. (M.C.) Colonel Siler gave his address on the subject, "A Discussion of Some of the Elements of Immunity with Particular Reference to Results Obtained in Experimental Studies of Strains of *E. Typhosa*."

**The George Washington University Medical Society** presented a Forum on Obstetrical Anesthesia at its regular monthly meeting, March 18. The Forum panel included three nationally known authorities in the field of Obstetrics and Gynecology: E. D. Plass, M.D., Professor of Obstetrics and Gynecology, State University of Iowa; Louis H. Douglass, M.D., Professor of Clinical Obstetrics, University of Maryland, and Thaddeus L. Montgomery, M.D., Associate Professor of Obstetrics, Jefferson.

**The Establishment of a Department of Syphilology** at Garfield Hospital was approved by the board of directors March 10. Department L, as the new

division will be known, will provide facilities for diagnosis, clinic treatment and hospitalization.

Dr. William H. Hough will be chief of the department and Dr. Russell J. Fields will be director in charge of clinical work. Three Washington syphilologists have accepted invitations to serve on the advisory board, Drs. H. H. Hazen, Lee McCarthy, and F. J. Eichenlaub.

Services and drugs will be free to those unable to pay. A social service worker has been added for the department. Besides the advisory board of syphilologists, there will be a 12-man consulting staff consisting of specialists in other fields of medicine.

**A Committee on Contact Infections**, which is to function jointly with a similar Committee of the American Academy of Pediatrics, has been appointed by President Mallory and its personnel approved by the Executive Board on March 28. The Committee is composed of the following members:

Dr. Harry A. Ong, Chairman; Drs. Hugh J. Davis, Harry A. Spigel, William S. Anderson and Ethel C. Dunham (ex officio).

**The Washington Gynecological Society** met March 25 at the Shoreham Hotel, when the following scientific program was presented:

"Premature Separation of the Placenta—A Review of Five Years at Columbia Hospital." Raymond T. Holden, Jr., M.D.

"Inversion of the Uterus—Report of an Unusual Case." E. W. Titus, M.D., and C. H. Hixson, M.D.

"Breech Presentation with Hyperextension of the Neck—Report of Two Cases." Robert B. Nelson, Jr., M.D.

**The Washington Branch of the American Pharmaceutical Association** has presented health topics of timely interest at its recent meetings. On February 13 Dr. J. A. Gannon gave a talk entitled, "The National Cancer Program, with Particular Reference to the Pharmacist." Dr. Harry F. Dowling spoke before the meeting March 20 on the subject, "New Methods of Treating Pneumonia," when he discussed both serotherapy and chemotherapy as applied to this disease.

**The Variety Club of Washington** has assembled the equipment for a premature nursery to be staffed

and operated by Sibley Memorial Hospital. In addition to this generous gift, the Variety Club also sent one of the hospital supervisors, Mrs. Flora Rosenau, to the Michael Reese Hospital in Chicago to study the technic used there. One of the units in the nursery is a portable which can be used on request of the physician to transport premature babies. Society members are invited to avail themselves of these added hospital resources.

**The Washington Medical and Surgical Society** will hold its regular monthly meeting April 24 at the Kennedy Warren, when Dr. Harry F. Dowling will present a paper on "The Treatment of Pneumonia with Sulfapyridine." There will be case reports by Drs. J. K. Cromer and William H. Clements.

The Society will hold its annual banquet on May 6 at the Mayflower Hotel, and about 500 members and guests are expected to attend. Senator Robert R. Reynolds of North Carolina will be the guest speaker. He will be introduced by Senator J. Hamilton Lewis of Illinois.

The Frank E. Gibson Annual Award of a certificate and cash prize will be presented at the banquet to the Society member who has made the most outstanding contribution to medicine during the past year. Dr. Gibson has served the Society as treasurer since 1903 and his colleagues give this award each year to an outstanding member in his honor.

**The George Martin Kober Medical Society** will hold its next regular monthly meeting at the Columbia Country Club, April 17, 1939. The essayist, Dr. Lyle M. Mason, will use for his subject, "A Resumé of Sulfanilamide Therapy in Urology." A case report will be given by Dr. Joseph L. Gilbert, who will present a problem in neuropsychiatry.

At the meeting held March 20, Dr. Thomas E. Mattingly, the essayist, presented a paper on "The Problems of Medical Progress." A case report was then given by Dr. Robert A. Bier on the topic, "An Unusual Feeding Problem."

**Dr. Arthur C. Christie** has recently been appointed as consultant to the United States Public Health Service, National Cancer Institute, in connection with the work of the National Advisory Cancer Council.

# MEDICAL ANNALS

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### OBSERVATIONS ON THE USE OF THE SODIUM SALT OF SULFAPYRIDINE A PRELIMINARY REPORT

HARRY F. DOWLING, M.D., AND THEODORE J. ABERNETHY, M.D., *Clinical Instructors in  
Medicine, George Washington University School of Medicine*

Numerous reports have recently appeared in the literature attesting to the value of sulfapyridine (2 sulfanilamidopyridine), a derivative of sulfanilamide, in experimental infections with the pneumococcus and other organisms. Clinical investigations also indicate that the administration of this drug to patients with pneumococcal pneumonia will reduce the mortality rate below that usually found in such patients when treated symptomatically alone.

Since sulfapyridine is relatively insoluble, it has been administered only by the oral route. In a large number of patients this method of administration results in a sufficiently high level of free sulfapyridine (the form in which the drug is therapeutically active) and is often followed by rapid clinical improvement. Nevertheless, in a significant percentage of cases, the oral route is unsatisfactory. First, the drug often causes nausea and vomiting. In our experience (Abernethy and Dowling<sup>1</sup>) nausea occurred in 3 per cent of 100 cases treated with sulfapyridine, and both nausea and vomiting in 28 per cent. In 6 cases, these symptoms were severe enough to prevent further administration of the drug. Second, even if sulfapyridine can be administered uninterruptedly, absorption from the gastrointestinal tract is slow and varies markedly among different persons on the same

dosage schedule, as shown by Long and Feinstone<sup>2</sup> and by Stokinger.<sup>3</sup> In some patients, either absorption is so slow or acetylation (to the therapeutically inactive form) and excretion are so rapid that the concentration of free sulfapyridine never reaches a level high enough to produce the desired results. As a consequence of the operation of one or all of the above factors in many cases, some form of the drug which can be given parenterally is urgently needed.

Marshall, Bratton and Litchfield<sup>4</sup> prepared the sodium salt of sulfapyridine and found it to be soluble in water to the extent of 63 grams per 100 c.c. When this compound was administered orally to animals the blood levels of sulfapyridine were found to be roughly proportional to the dose, and were much higher than when an equal dose of the relatively insoluble acid (sulfapyridine) was given.

Barnett and his coworkers<sup>5</sup> gave the sodium salt to patients with pneumonia in a 2 per cent solution by rectum. They stated that they were able to maintain an adequate blood concentration. Dr. Perrin H. Long<sup>6</sup> has administered the sodium salt intravenously to patients with pneumococcal pneumonia and has found it a satisfactory method for maintaining adequate blood levels.



Through the kindness of Dr. W. G. Malcolm of the Lederle Laboratories, Inc., and later also of Dr. D. F. Robertson of Merck and Company, we were able to obtain a quantity of the sodium salt of sulfapyridine for clinical trial. At the suggestion of Dr. Long, this was made up in a 5 per cent solution in distilled water, since the drug is isotonic in this strength. Later a 5 per cent solution in physiological saline was used. The usual dose administered to an adult of average size was 3.8 grams, and for children and other adults 0.05 gram per kilogram of body weight. The solution was administered slowly over the course of 10 to 12 minutes, care being taken that none of the solution escaped outside of the vein, since the highly alkaline solution (pH, about 11) would be expected to cause considerable pain and tissue damage.

Blood sulfapyridine determinations were made by Marshall's method, previously described for sulfanilamide (Marshall;<sup>7</sup> Marshall and Litchfield;<sup>8</sup> Marshall and Cutting<sup>9</sup>).

### RESULTS

Up to the present time we have given 14 injections of the sodium salt to 10 patients. Seven of these patients were ill with pneumococcal pneumonia, Type I pneumococcus being the causative agent in 5 cases and Type III and VIII pneumococcus in 1 case each. One patient had an endocarditis caused by Type I pneumococcus (diagnosis later verified at autopsy). One patient had a staphylococcal septicemia following trauma to an abscess of the skin, and 1 patient an *Escherichia coli* peritonitis following a ruptured appendix. The pertinent data on these patients are listed in table 1. In every instance there was a rise in the level of free sulfapyridine in the blood within 10 minutes after the end of the injection. The smallest increase following the injection of 3.8 grams was 3.49 mg. per cent, which occurred following the fourth injection given to patient 6; and the greatest increase, 12.9 mg. per cent, in case 8. The increases following injections in other instances varied between these two extremes. Further slight increases

of the free sulfapyridine in the blood during 30 minutes after the end of the injection occurred in cases 1 and 3, while in case 4 specimens of blood taken 20 and 30 minutes after the end of the injection showed a slight progressive decrease from the level at 10 minutes.

In case 6 the sodium salt was used alone. Chart I shows that 4 injections of 3.8 grams each were given, and that the amount of free sulfapyridine in the blood was kept above 4 mg. per cent except for one fall to 2 mg. per cent following an interval of 16 hours between injections. This patient was suffering from a generalized peritonitis following a ruptured appendix. Culture of the peritoneal exudate yielded *Escher-*

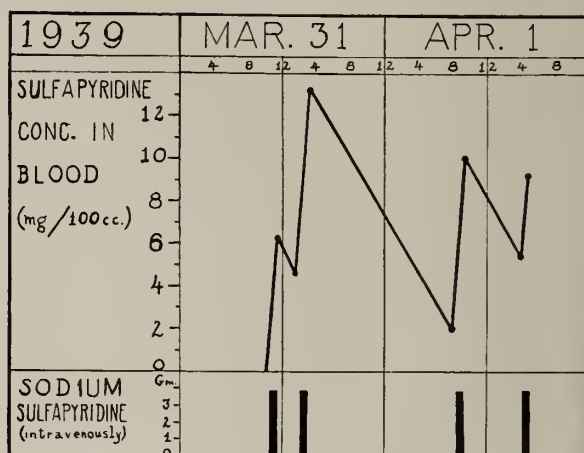


CHART I. Case 6. Ruptured appendix and *Escherichia coli* peritonitis, treated with sodium sulfapyridine alone.

*ichia coli*. Sodium sulfapyridine seemed to exert no influence upon the course of the infection, so that when, in the afternoon of the second day of treatment, a large number of red blood cells suddenly appeared in the urine, the injections of the drug were stopped. Forty-eight hours after the last injection the blood sulfapyridine was 0.69 mg. per cent. This case will be discussed further in the consideration of toxic reactions.

One of the important questions which needs to be answered with regard to sulfapyridine therapy is the level at which the free sulfapyridine must be maintained in the blood in order to obtain a good therapeutic response. It is our tentative opinion that this "minimum level of

effectiveness" varies for different persons. We have observed patients whose free blood sulfapyridine never reached 3 mg. per cent, but

white girl with Type I pneumococcal pneumonia. Although she received 4 grams of sulfapyridine by mouth at 6 p. m. on the third day of

TABLE 1  
Results of the Intravenous Injection of the Sodium Salt of Sulfapyridine

| CASE NO. | COLOR<br>SEX<br>AGE   | DIAGNOSIS                                                                    | AMOUNT IN-<br>JECTED (GRAMS) | FREE BLOOD SULFAPYRIDINE (MG. PER CENT) |                             |         |         |         |       |       |       |       |                        | IMMEDIATE<br>REACTIONS | REMARKS |
|----------|-----------------------|------------------------------------------------------------------------------|------------------------------|-----------------------------------------|-----------------------------|---------|---------|---------|-------|-------|-------|-------|------------------------|------------------------|---------|
|          |                       |                                                                              |                              | Be-<br>fore<br>In-<br>jec-<br>tion      | Time after End of Injection |         |         |         |       |       |       |       |                        |                        |         |
|          |                       |                                                                              |                              |                                         | 5 min.                      | 10 min. | 20 min. | 30 min. | 1 hr. | 2 hr. | 3 hr. | 4 hr. |                        |                        |         |
| 1        | White<br>Male<br>36   | Pneumococcal Pneu-<br>monia, Type I                                          | 3.8                          | 4.0*                                    |                             | 7.6     | 7.7     | 7.8     |       |       |       |       | Nausea and<br>vomiting | Transient hematuria    |         |
| 2        | White<br>Female<br>14 | Pneumococcal Pneu-<br>monia, Type I                                          | 3.0                          | 6.4*                                    |                             | 10.8    |         |         |       |       |       |       | Chill                  |                        |         |
| 3        | White<br>Male<br>33   | Staphylococcal Septi-<br>cemia                                               | 3.8                          | 5.5*                                    | 12.5                        |         |         | 13.3    |       | 12.0  |       |       | None                   |                        |         |
| 4        | White<br>Male<br>48   | Pneumococcal Endo-<br>carditis, Type I                                       | 3.8                          | 3.9*                                    |                             | 12.3    | 11.1    | 10.5    |       |       |       |       | None                   |                        |         |
| 5        | White<br>Male<br>29   | Pneumococcal Pneu-<br>monia, Type I                                          | 3.8                          | 3.1*                                    | 13.2                        |         |         |         | 8.3   |       | 7.1   |       | Nausea and<br>vomiting |                        |         |
|          |                       |                                                                              | 3.8                          | 6.2*                                    | 13.3                        |         |         |         |       |       | 10.0  |       | None                   |                        |         |
| 6        | White<br>Male<br>58   | Ruptured Appendix<br>with Generalized<br>Peritonitis (Escher-<br>ichia coli) | 3.8                          | 0                                       |                             | 6.2     |         |         |       |       | 4.6   |       | None                   | Marked hematuria       |         |
|          |                       |                                                                              | 3.8                          | 4.6                                     |                             | 13.9    |         |         |       |       |       |       | None                   | and suppression        |         |
|          |                       |                                                                              | 3.8                          | 2.0                                     |                             | 10.0    |         |         |       |       |       |       | None                   | of urine               |         |
|          |                       |                                                                              | 3.8                          | 5.5                                     |                             | 9.0     |         |         |       |       |       |       | None                   |                        |         |
| 7        | White<br>Male<br>58   | Pneumococcal Pneu-<br>monia, Type I                                          | 3.3                          | 3.8*                                    |                             | 16.7    |         |         | 11.0  | 9.6   | 8.8   | 12.4  | None                   |                        |         |
| 8        | White<br>Female<br>75 | Pneumococcal Pneu-<br>monia, Type III                                        | 2.2                          | 8.5*                                    |                             | 21.4    |         |         | 14.1  | 14.0  | 13.8  |       | None                   |                        |         |
| 9        | Colored<br>Male<br>32 | Pneumococcal Pneu-<br>monia, Type VIII                                       | 3.4                          | 0                                       |                             | 6.8     |         |         | 6.0   | 5.7   | 5.5   | 5.9   | None                   |                        |         |
| 10       | Colored<br>Male<br>29 | Pneumococcal Pneu-<br>monia, Type I                                          | 3.9                          | 0                                       |                             | 7.0     |         |         | 5.7   | 4.5   | 3.8   | 3.6   | None                   |                        |         |

\* Sulfapyridine administered by mouth prior to injection of sodium salt.

who, nevertheless, experienced prompt deferescence and recovery. Apparently case 2, portrayed graphically in Chart II, is the antithesis of this. This patient was a 14-year-old

her illness and 1 gram every 4 hours thereafter, and the free blood sulfapyridine was 6.4 mg. per cent 22 hours after the beginning of treatment, nevertheless there had been no appreciable

effect upon the course of her illness. Her temperature was 103° F. at this time, her pulse rate 128 per minute and her respirations 24 per minute. Immediately after the blood sample

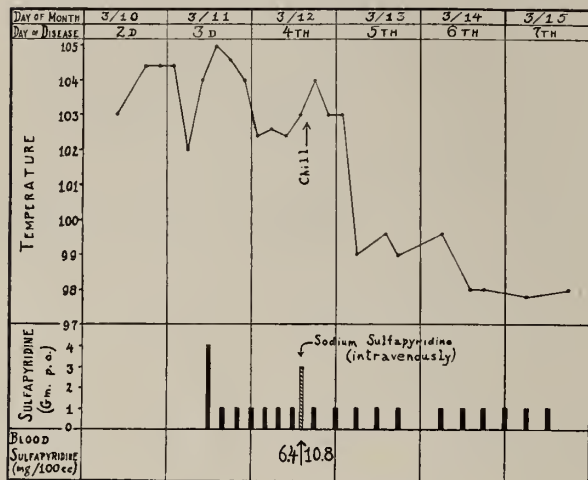


CHART II. Case 2. Type I pneumococcal pneumonia treated with sulfapyridine by mouth and one intravenous injection of the sodium salt.

was obtained for the above-mentioned determination, she received 3 grams of the sodium salt intravenously. Ten minutes later the free sulfapyridine was 10.8 mg. per cent. A slight chill began about 15 minutes after the termination of the injection, following which the temperature rose to 104°. At 8 o'clock the next morning, 16 hours after the injection, the temperature had dropped to 99°F. and the pulse rate to 96. The temperature and pulse rate remained below 100°F. and 100, respectively, and later fell to normal. The patient recovered without complications.

Chart III (case 7) shows the high level of sulfapyridine which may be reached in the blood by a combination of sulfapyridine orally and the sodium salt intravenously. The patient, a 58-year-old white male with Type I pneumococcal pneumonia, was given 4 grams of sulfapyridine at 6 p. m. on the fourth day of his disease and 1 gram every 4 hours for the next 2 days. A blood determination at 8 a. m. on the fifth day showed 3.77 mg. per cent of free sulfapyridine. Ten minutes after the injection of 3.3 grams of the sodium salt intravenously

the blood sulfapyridine was 16.66 mg. per cent. It dropped to 11 mg. at the end of the first hour and to 9.56 and 8.8 mg. per cent at the end of 2 and 3 hours, respectively. At the end of 4 hours, however, the blood sulfapyridine rose to 12.36 mg. per cent (apparently due to the absorption of the orally-administered drug). Thereafter it remained between 11.5 and 16 mg. per cent without further injections until the oral administration was discontinued on the tenth day. The patient made an uneventful recovery.

#### REACTIONS TO THE SODIUM SALT

None of the 14 injections was accompanied by any untoward reactions, except in the case of the 1 patient already mentioned (case 2) who had a slight chill after the injection of the sodium salt. This chill seemed to have no effect upon the course of the disease.

Two patients (cases 1 and 5) became nauseated during the last few minutes of the injection and vomited just as it was finished. Both of these patients had experienced considerable nausea and vomiting during the previous admin-

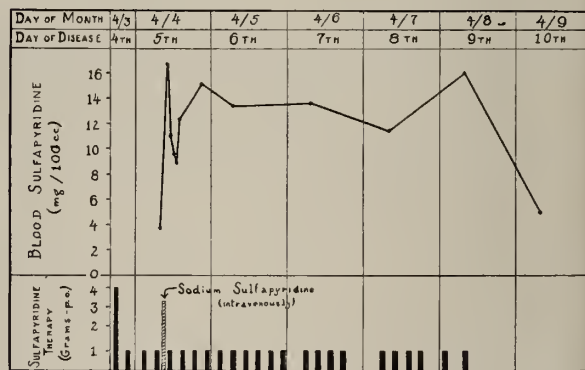


CHART III. Case 7. Type I pneumococcal pneumonia, treated with sulfapyridine by mouth and one intravenous injection of the sodium salt.

istration of the oral preparation, although neither had been nauseated for several hours before the injection. It is interesting to note that nausea and vomiting occurred in case 5 only after the first injection, although just as high a blood level occurred following the second injection. Another observation of interest is that the other patients, although several of



them attained a higher blood sulfapyridine level, did not experience any nausea or vomiting.

A more serious event was the presence of hematuria in 2 patients. In case 1 this complication occurred several days after the single injection of the sodium salt, but while the patient was still on oral sulfapyridine therapy. The condition subsided within 24 hours and no evidence of renal damage remained. In case 6 the hematuria occurred about 36 hours after the first injection of the sodium salt and after 4 injections had been given altogether. Although treatment was stopped and fluids forced, the hematuria continued, suppression of urine developed, the blood nonprotein nitrogen rose to 46.1 mg. per cent on the second day after the last treatment, and the patient died on the following day without proper kidney function having been reestablished. Although he undoubtedly would have succumbed to the peritonitis, the kidney complication is thought to have hastened his death.

No other toxic manifestations were observed in any of the patients.

#### DISCUSSION

It has been evident to clinicians treating cases of pneumonia with sulfapyridine that the treatment is defective in that the patients do not always reach and maintain a satisfactory level of free sulfapyridine in the blood because of poor absorption or too rapid acetylation and excretion of the drug, or a combination of these factors. Furthermore, in certain patients protracted vomiting prevents further administration of the sulfapyridine by mouth, and the poor solubility of the drug makes any other method of administration difficult. The sodium salt seems ideally suited to remedy these defects. It apparently breaks down immediately upon entering the blood stream, liberating free sulfapyridine, and seems to have no toxic reactions apart from those of sulfapyridine.

The quickness with which a high blood sulfapyridine level is obtained after the injection of the sodium salt suggests another possible use

for the new compound. It may be desirable to begin the treatment of very ill patients with an injection of the sodium salt at the same time that sulfapyridine treatment is begun by mouth. Unless other uses for the compound may be found, we feel that it ought not be used to displace oral administration of sulfapyridine but only to supplement it whenever necessary. We feel also that neither the sodium salt nor sulfapyridine should be used without proper control by frequent observations of blood sulfapyridine level, complete blood counts and urinalyses.

#### SUMMARY

Ten cases are reported in which 14 intravenous injections of the sodium salt of sulfapyridine were given. After each injection there was a prompt rise in the content of free sulfapyridine in the blood, which tended to fall gradually over the course of the next few hours unless further sulfapyridine was given by the oral method or by subsequent injections of the sodium salt.

Further investigation will be necessary, however, to determine whether the sodium salt given intravenously is more toxic than sulfapyridine administered orally.

#### BIBLIOGRAPHY

1. ABERNETHY, T. J., AND DOWLING, H. F.: The Treatment of Pneumonia with Sulfapyridine. To be published.
2. LONG, P. H., AND FEINSTONE, W. H.: Observations Upon the Absorption and Excretion of Sulfapyridine (2 Sulfanilyl Aminopyridine). *Proc. Soc. Exper. Biol. & Med.*, 1938, 39, 486.
3. STOKINGER, H. E.: Absorption, Acetylation and Excretion of 2 Sulfanilamidopyridine. *Proc. Soc. Exper. Biol. & Med.*, 1939, 40, 61.
4. MARSHALL, E. K., JR., BRATTON, A. C., AND LITCHFIELD, J. T., JR.: The Toxicity and Absorption of 2-Sulfanilamidopyridine and Its Soluble Sodium Salt. *Science*, 1938, 88, 597.
5. BARNETT, H. L., HARTMANN, A. F., PERLEY, A. M., AND RUHOFF, M. B.: The Treatment of Pneumococcal Infections in Infants and Children with Sulfapyridine. *J. A. M. A.*, 1939, 112, 518.
6. LONG, P. H.: Personal communication.
7. MARSHALL, E. K., JR.: Determination of Sulfanilamide in Blood and Urine. *J. Biol. Chem.*, 1937, 122, 263.
8. MARSHALL, E. K., JR., AND LITCHFIELD, J. T., JR.: Determination of Sulfanilamide. *Science*, 1938, 88, 85.
9. MARSHALL, E. K., JR., AND CUTTING, W. C.: Absorption and Excretion of Sulfanilamide in Mouse and Rat. *Bull. Johns Hopkins Hosp.*, 1938, 63, 328.

# MENINGOCOCCAL MENINGITIS\*

## REPORT OF TWENTY-SEVEN CASES TREATED WITH SERUM AND SULFANILAMIDE

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The purpose of this paper is to present a resumé of the essential features of 27 inter-epidemic cases of meningococcal meningitis. This number comprises all of the patients with this disease admitted to the Walter Reed General Hospital from October, 1935 to November, 1938. The group was made up of 14 Civilian Conservation Corps patients, 6 soldiers, 4 World War veterans and 3 civilian dependents. All cases occurred in otherwise healthy males between the ages of 9 and 43 years. There were 21 white patients and 6 negroes.

Our present knowledge of the use of anti-meningococcal serum is largely due to the extensive investigations of Flexner.<sup>1</sup> Although it is recognized that the mortality and morbidity vary greatly from year to year, in general the death rate from this disease has been reduced from 75 per cent in the pre-serum days to 35 per cent by the use of serum.<sup>2</sup> There have been many modifications of and additions to the method of treatment as originally employed by Flexner, such as frequent spinal drainages, the use of oral or intraspinal antiseptics, complement, antitoxin and others. Each has enjoyed a period of popularity, but the one consistently effective therapeutic agent in the treatment of meningococcal meningitis is potent antimeningococcal serum. The recently introduced drug, sulfanilamide, may also have its vogue, but although the time for a final judgment is not yet here, it is felt that it will become a valuable adjunct in the treatment of meningitis in the future.

### SYMPTOMATOLOGY

A discussion of the mode of onset and physical findings is not within the scope of this paper, as these features have been thoroughly analyzed in comprehensive monographs.<sup>3</sup> It will be

sufficient to indicate the incidence of the various signs and symptoms as they occurred in the 27 cases of this series (table 1). It is interesting to note the frequency with which vomiting was complained of. In slightly more than a third of the patients a sparse petechial rash was noted, most frequently on the chest, arms and face.

Meningococcal meningitis produces marked changes in the blood and spinal fluid. The average leukocyte blood count in this series was

TABLE 1  
*Incidence of Various Signs and Symptoms Occurring in 27 Cases of Meningococcal Meningitis*

|                                   | CASES |                                    | CASES |
|-----------------------------------|-------|------------------------------------|-------|
| Headache . . . . .                | 26    | Coma . . . . .                     | 6     |
| Stiffness of neck . . . . .       | 25    | Pain in eyes . . . . .             | 5     |
| Vomiting . . . . .                | 24    | Paralyses . . . . .                | 5     |
| Fever . . . . .                   | 24    | Sweating . . . . .                 | 4     |
| Kernig's sign . . . . .           | 22    | Purpuric rash . . . . .            | 3     |
| Brudzinski's sign . . . . .       | 15    | Active delirium . . . . .          | 3     |
| Stiffness of back . . . . .       | 12    | Unequal pupils . . . . .           | 3     |
| Petechial rash . . . . .          | 10    | Bronchitis . . . . .               | 3     |
| Hyperreflexia . . . . .           | 10    | Herpes . . . . .                   | 3     |
| Pain in legs and thighs . . . . . | 10    | Stupor . . . . .                   | 2     |
| Chills . . . . .                  | 10    | Incontinence . . . . .             | 2     |
| Delirium . . . . .                | 8     | Babinsky's sign positive . . . . . | 2     |
| Conjunctivitis . . . . .          | 7     | Otitis media . . . . .             | 1     |
| Pharyngitis . . . . .             | 6     |                                    |       |

22,100, with extremes of 9,000 and 40,000. Ninety per cent of these cells were neutrophils. The spinal-fluid pressure was increased above 200 mm. of water pressure in 22 cases. The fluid was cloudy in 24 cases and contained an average of 9,856 polymorphonuclear white blood cells in the first specimens and 15,007 cells after 2 to 4 days of treatment. No significant changes were noted in the number and character of the red blood cells. A Gram-negative intra and/or extracellular diplococcus was recovered by smear or culture in 21 cases. In 2 patients with fulminating meningitis and 1 patient with status thymicolymphaticus the organisms were not demonstrated until after death.

\* From the Infectious Disease Section of the Medical Service of the Walter Reed General Hospital, Washington, D. C.

Certain instances of pneumococcal, streptococcal and staphylococcal meningitis were confused with meningococcal meningitis, but these cases followed some upper respiratory chronic or acute, suppurative or catarrhal infection, such as otitis media, acute sinusitis or severe hemolytic streptococcal pharyngitis and tonsillitis.

Two cases of syphilitic meningitis offered some difficulty in diagnosis. The onset in these cases was more insidious. A history of antisyphilitic treatment and the finding of unequal, irregular pupils and a scar on the penis caused us to wait a day for a Wassermann reaction of the blood and spinal fluid, which proved to be positive in both cases. Positive Wassermann reactions of the blood were present in none of the 27 cases in this series. The spinal-fluid Wassermann was negative in all instances except after intrathecal treatment, and in a few of these cases positive reactions were obtained.

In 5 cases of tuberculous meningitis gross pulmonary lesions were noted in 4, seminal vesiculitis in 3, choroidal tubercles in 3, and caries of the dorsal vertebrae in 2. Four cases of so-called aseptic meningitis caused considerable difficulty in differential diagnosis. In all of these cases the white cells in the spinal fluid were predominantly of the lymphocytic variety, and no organisms were demonstrated by stained smear or culture. In a case of Friedlaender's bacillus meningitis the patient had a suppurating otitis media, and the causative organism was readily demonstrated in the spinal fluid.

#### TREATMENT

The specific treatment given this group of 27 cases consisted of antimeningococcal serum, antitoxin, and sulfanilamide. Serum was administered intravenously and intraspinally immediately after the necessary sensitivity tests had been performed. Soon after the first spinal drainage, 100 c.c. of serum diluted with 200 or 300 c.c. of normal saline was given slowly intravenously. The average amount of serum given in this manner to 22 patients was 221 c.c., with extremes of 45 c.c. and 705 c.c. Intraspinal

serum was given warmed, undiluted, by the gravity method and in amount 5 to 10 c.c. less than the quantity of spinal fluid withdrawn. Intrathecal serum was given to 18 patients in an average total amount of 106 c.c., with extremes of 15 c.c. and 340 c.c. Much has been written about the use of intravenous serum alone in the treatment of meningitis,<sup>4</sup> but it is our opinion that one method is not applicable to all cases and that in some instances of severe infection intraspinal serum is indicated. Intramuscular serum was not employed in the treatment of this group of patients.

Antitoxin was given to 3 patients of this series before they were admitted to this hospital. In 1 of these patients an additional 30,000 units was given, making a total of 90,000 units. He also received 235 c.c. of serum intraspinally and 200 c.c. intravenously and, though he developed a transient facial paralysis, he eventually recovered. One patient, after being given 120,000 units of antitoxin, developed a chronic meningitis and was then transferred to this hospital. He was treated with sulfanilamide and cured. Hoyne<sup>5</sup> reports very favorable results from the use of antitoxin. Our experience is too limited to express an opinion as to its value.

Sulfanilamide was administered to 7 patients in an average total dose of 32.5 grams, with extremes of 9 grams and 60 grams. Five were given both serum and sulfanilamide, while 2 were given sulfanilamide alone. One of the former group died after receiving 14.5 grams of sulfanilamide and 100 c.c. of serum. He developed a subarachnoid block.

Sulfanilamide is best employed by mouth if the patient is not vomiting. Otherwise, it can be given subcutaneously by the method outlined by Schwenker.<sup>6</sup> It is absorbed rapidly, and no untoward effects have been noted. Five to 10 grams of sulfanilamide is given each day to adults for 3 days with a gradual diminution of the dose thereafter.<sup>7</sup> The spinal fluid sulfanilamide content should be determined daily and an attempt made to maintain a concentration of from 3 to 7 mg. per hundred c.c.



COMPLICATIONS AND DEATHS

The incidence of the various complications is summarized in table 2. Some form of serum sickness occurred in the majority of patients. Often it manifested itself by a slight fever, 2 or 3 liquid bowel movements, or a few urticarial wheals. In the patients exhibiting a severe reaction, fever, urticaria, polyarthritis, and a diarrhea characterized the attack with variations in severity in the individual case. One patient complained of blurred vision just after an attack of severe serum sickness; examination revealed an optic neuritis of the right eye from which he recovered after 5 months. Another patient, a

TABLE 2  
*Incidence of Various Complications Occurring in 27 Cases of Meningococcal Meningitis*

|                              | CASES |                            | CASES |
|------------------------------|-------|----------------------------|-------|
| Conjunctivitis . . . . .     | 7     | Paraplegia . . . . .       | 1     |
| Severe serum sickness . . .  | 6     | Optic neuritis . . . . .   | 1     |
| Chronic meningitis . . . . . | 4     | Facial paralysis, tran-    |       |
| Transient paralysis, 6th     |       | sient . . . . .            | 1     |
| cranial nerve . . . . .      | 3     | Otitis media . . . . .     | 1     |
| Arthritis, nonsuppurative .  | 2     | Status thymicolymphat-     |       |
| Arthritis, suppurative . . . | 1     | icus . . . . .             | 1     |
| Deafness, complete, bi-      |       | Endocarditis . . . . .     | 1     |
| lateral . . . . .            | 1     | Pneumonia, type 3 . . . .  | 1     |
| Deafness, transient, uni-    |       | Empyema . . . . .          | 1     |
| lateral . . . . .            | 1     | Subarachnoid block . . . . | 1     |
| Panophthalmitis . . . . .    | 1     | Recurrent attack . . . . . | 1     |

9-year-old boy, had 2 attacks 7 months apart, with good general health in between the attacks. He was treated with serum both times, and he had only a mild serum sickness on each occasion. In this series there were 36 complications, 6 of which occurred in 1 patient (case 1).

There were 5 deaths in this group of 27 cases, making a mortality of 18.5 per cent. Two deaths were caused by the acute fulminating type of meningococcemia; if these were excluded the mortality would be 11.1 per cent. A third death was caused by status thymicolymphaticus (case 2) secondary to serum administration, and if this were also excluded the mortality would be 7.4 per cent. With the exception of 1 case complicated by endocarditis, another by status thymicolymphaticus, and a third by capillary

hemorrhages into the cortex of the adrenal glands, the necropsy findings agreed with the clinical findings in all essential particulars. Postmortem examinations were performed in all fatal cases.

ILLUSTRATIVE FATAL CASES

Case 1. N. C., a 17-year-old negro C.C.C. enrollee, was admitted to the Walter Reed General Hospital on November 1, 1936. The present illness began suddenly 2 days prior to admission with a severe headache followed by nausea, vomiting, fever and stiffness of the neck. He was semicomatose when admitted. Aside from a conjunctivitis and gross evidence of meningitis, there were no other physical findings of importance.

The meningitis was successfully treated with intravenous and intraspinal serum, but despite treatment with local antiseptics, ointments and serum, the conjunctivitis persisted, resulting in a panophthalmitis and enucleation. On the 10th day the patient contracted type 3 pneumococcal pneumonia of the left lower lobe that spread to the right lower lobe (not treated with antipneumococcal serum), leading to an empyema with a bronchial fistula necessitating an open thoracotomy. Immediately following the onset of the pneumonia, he developed a paraplegia with the sensory level at the umbilicus and a suppurating arthritis of the left knee (organism not recovered). The patient was *in extremis* for months, but after 2 years he regained the use of his lower extremities and was discharged to his own care.

Case 2. L. T., a 19-year-old negro C.C.C. enrollee, was admitted to the Walter Reed General Hospital on March 27, 1937. The available information about his past and family history was not important. The present illness began 3 days prior to admission with headache, backache, followed by nausea, vomiting, chills and fever. He presented typical neurologic evidence of meningitis. His spinal fluid was cloudy, under increased pressure and contained 5,000 white cells but no organisms on smear or culture.

This patient gave negative conjunctival and skin tests to horse serum. On the night of admission he was given 30 c.c. of antimeningococcal serum intraspinally; the following day this was repeated and 90 c.c. of serum was given intravenously with no reaction. On the third day during the administration of 60 c.c. of serum intravenously, diluted with normal saline, 1 to 3, he suddenly became restless, dyspneic, complained of tightness in his chest, and died within 3 minutes of the initial symptom.

Necropsy revealed the following: (1) weight 190 lbs.; (2) leptomeningitis, acute, suppurative; (3) thymus rest of 40 grams; (4) thoracic aorta 4.0 cm. in circumference, abdominal aorta 3.5 cm. in circumference; (5) hyperplasia of mesenteric lymph nodes; (6) lymphocytic hyperplasia of the periportal areas of the liver; (7) an occa-

sional diplococcus stained in the sections of the meninges. The course of events coupled with the vascular hypoplasia and lymphoid hyperplasia led to the diagnosis of status thymicolymphaticus as the cause of death.

### COMMENT

The various types of meningococcal infections occur throughout the world both sporadically and epidemically. It is a disease that causes great concern among the members of an invaded community. The reasons for this are clear. The ravages caused by an epidemic prior to the use of serum are well within the memory of many people now living. Even though the incidence of sporadic cases is low at the present time, the mortality is high, and during epidemics it is still higher. As a cause of hospitalization, meningitis is relatively unimportant, but as a cause of death it is relatively important.

TABLE 3

*The Mortality in 27 Cases of Meningococcal Meningitis Grouped According to Herrick's Classification<sup>4</sup>*

|                          | CASES | DEATHS | MORTALITY       |
|--------------------------|-------|--------|-----------------|
|                          |       |        | <i>per cent</i> |
| 1. Abortive type.....    | 2     | 0      | 0               |
| 2. Ordinary type.....    | 9     | 1      | 11.1            |
| 3. Severe type.....      | 14    | 2      | 14.3            |
| 4. Fulminating type..... | 2     | 2      | 100.0           |
| Total.....               | 27    | 5      | 18.5            |

In table 3 will be seen a classification of these 27 cases according to Herrick's 4 clinical types. If these percentages are compared with those of other investigators,<sup>8,9</sup> although the criteria used for judging the severity are not the same in all cases, in this interepidemic group there were relatively fewer of the fulminating and severe types and more of the abortive and ordinary forms.

Best results in treatment were obtained by employing an American Council on Pharmacy accepted polyvalent serum prior to its expiration date. A course of 1 to 3 intraspinal injections with 1 to 3 intravenous injections of 100 c.c. each was started as soon as the diagnosis was made. If there was no improvement after the first few days, the brand of serum was changed to one

giving the highest agglutination for the patient's own strain of organisms.

Sulfanilamide was used in conjunction with a potent serum mainly as the result of the experiments and recommendations of Branham and Rosenthal<sup>10</sup> and Brown.<sup>11</sup> In 98 collected cases,<sup>12</sup> including 5 of this series in which the combined therapy was used, there were 16 deaths, a mortality of 16.1 per cent. In another group of 103 cases<sup>6, 12, 13, 14</sup> including 2 cases from this series in which the drug was used alone, there were 13 deaths, a mortality of 12.6 per cent. The difference in mortality is not significant, especially since 16 cases<sup>12</sup> of the group treated with sulfanilamide alone were selected and corresponded roughly to Herrick's ordinary type. The results, however, warrant the belief that sulfanilamide is an effective agent to use in the treatment of meningococcal meningitis. Until our knowledge is more complete it is best employed in conjunction with a potent antimeningococcal serum.

### SUMMARY

The results of treatment in 27 cases of interepidemic meningococcal meningitis are analyzed and discussed.

In this group there were 36 complications including deafness, transient sixth and seventh nerve paralyses, arthritis, optic neuritis, paraplegia, endocarditis, subarachnoid block and panophthalmitis.

There occurred 5 deaths, 2 from acute fulminating meningococcemia and 1 from status thymicolymphaticus, a total mortality of 18.5 per cent.

Seven patients were treated with sulfanilamide, 5 patients with serum and sulfanilamide, and 2 with sulfanilamide alone.

The most effective form of treatment is considered to be intravenous and intraspinal antimeningococcal serum in conjunction with oral and/or subcutaneous sulfanilamide.

### BIBLIOGRAPHY

1. FLEXNER, S.: Rockefeller Inst. for Medical Research, N. Y., 1917, 48 p., 8°.

(Continued on page 160)



## THE HARRISON NARCOTIC ACT AND NARCOTIC DRUG ADDICTION\*

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The drugs which come within the purview of the Harrison Narcotic Act are opium and coca leaves, and any compound, manufacture, salt, derivative, or preparation thereof. A practitioner lawfully entitled to distribute, dispense, give away, or administer any of these drugs to patients upon whom he, in the course of his professional practice, is in attendance, may register under the act with the Collector of Internal Revenue of his district, and pay an occupational tax of \$1 per annum. It will be seen that a practitioner who is not qualified under the laws of a state or territory to distribute, dispense, give away, or administer narcotic drugs, is not eligible for registration under the Harrison Narcotic Act. In the case of a medical practitioner, this means, generally speaking, that he must have a valid and unrevoked license, issued by the appropriate authority of his particular jurisdiction, to practice medicine.

Having duly registered and having paid the occupational tax and received the special tax stamp, which is kept posted in his office, the physician may obtain whatever narcotic drugs or preparations he may require for dispensing in his practice by the use of an official order form which is sent to a manufacturer registered in Class 1 under the act or to a wholesale dealer registered in Class 2 under the act. He must keep a duplicate copy of the order form on file for a period of 2 years, subject to inspection. Official order forms are obtainable by registered persons from the Collector of Internal Revenue at a cost of 10 cents per book of 10 originals and 10 duplicates.

The registered practitioner may also issue prescriptions for narcotic drugs and preparations to patients upon whom he, in the course of professional practice, is in attendance. Such prescriptions may be filled by a registered retail

dealer (druggist), but a practitioner should not obtain from a druggist a supply of narcotics for general office use pursuant to a so-called prescription.

A prescription, in order to be effective in legalizing the possession of unstamped narcotic drugs and in eliminating the necessity for use of order forms, must be issued for legitimate medical purposes. The responsibility for the proper prescribing and dispensing of narcotic drugs is upon the practitioner, but a corresponding liability rests with the druggist who fills the prescription. An order purporting to be a prescription issued to an addict or habitual user of narcotics, not in the course of professional treatment but for the purpose of providing the user with narcotics sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning and intent of the act; and the person filling such an order, as well as the person issuing it, may be charged with violation of the law. In the case of narcotics dispensed by the practitioner directly to the patient, the same standard applies, i.e., that the drugs shall be dispensed only in the course of professional practice.

The constitutionality of the Harrison Narcotic Law was first challenged before the United States Supreme Court in 1919 by Dr. C. T. Doremus of Texas. Dr. Doremus had been indicted under section 2 of the act. The Supreme Court sustained the constitutionality of section 2 as having reasonable relation to the raising of revenue, and stated that the act "may not be declared unconstitutional because its effect may be to accomplish another purpose as well as the raising of revenue." (U. S. v. Doremus, 249 U. S. 86)

In another case decided the same day (March 3, 1919) the Supreme Court enunciated an important principle in connection with the meaning of the words "professional practice" as used in section 2 of the Harrison Act. In this case

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\* Read before the Society, January 11, 1939.



(Webb & Goldbaum v. U. S., 249 U. S. 96) Webb was a practicing physician and Goldbaum a retail druggist in Memphis. It was Webb's regular custom and practice to prescribe morphine for habitual users upon their application to him therefor. He furnished these prescriptions not after consideration of the applicant's individual case and in such quantities and with such direction as, in his judgment, would tend to cure the habit, or as might be necessary or helpful in an attempt to break the habit, but with such consideration and in such quantities as the applicant desired for the sake of continuing his accustomed use. Goldbaum was familiar with such practice and habitually filled such prescriptions. Within a period of 11 months Goldbaum purchased from wholesalers in Memphis 30 times as much morphine as was bought by the average retail druggist doing a larger general business, and he sold narcotic drugs in 6,500 instances. It was also shown that during the same period Webb had issued and Goldbaum had filled over 4,000 such narcotic prescriptions, and that a certain user of the drugs had applied to Webb for morphine and was given at one time 10 so-called prescriptions for 1 gram each, which prescriptions were filled at one time by Goldbaum although each was made out in a separate and fictitious name. The United States Circuit Court of Appeals, upon this statement of fact, propounded the following question to the United States Supreme Court:

"If a practicing and registered physician issues an order for morphine to an habitual user thereof, the order not being issued by him in the course of professional treatment in the attempted cure of the habit, but being issued for the purpose of providing the user with morphine sufficient to keep him comfortable by maintaining his customary use, is such order a physician's prescription under exception (b) of section 2 (of the Harrison Act)?"

To this question the Supreme Court answered, "To call such an order for the use of morphine a physician's prescription would be so plain a perversion of meaning that no discussion of the subject is required. That question should be answered in the negative."

The Supreme Court emphasized this rule in a later case involving the prescribing of narcotics by a practitioner for an addict, by holding in part as follows:

"Manifestly the phrases 'to a patient' and 'in the course of his professional practice only' are intended to confine the immunity of a registered physician, in dispensing the narcotic drugs mentioned in the act, strictly within the appropriate bounds of a physician's professional practice, and not to extend it to include a sale to a dealer or a distribution intended to cater to the appetite or satisfy the craving of one addicted to the use of the drug. A 'prescription' issued for either of the latter purposes protects neither the physician who issues it nor the dealer who knowingly accepts and fills it." (Jin Fuey Moy v. U. S. (1920) 254 U. S. 189)

Those practitioners, fortunately comparatively few in number, who have commercialized their profession by catering to drug addicts in disregard of the tenets of professional practice, and who find themselves on trial charged with offenses against the narcotic law, sometimes resort to a claim of entrapment as a defense. A representation is made on behalf of the defendant physician, and it is sought to be substantiated, that he had no intention of transgressing the law, but that he was enticed into selling or prescribing the drug for improper purposes by the investigating officer or by someone associated with that officer. It should be stated at this point that an investigating officer is not authorized to commence an active investigation of the alleged narcotic irregularities on the part of a practitioner without first securing express authority to do so from his District Supervisor, and that authority is not granted unless the investigation is based on well-founded suspicion, strong circumstances or trustworthy and reliable information that such violation is being committed. The rule which the Federal courts apply in this regard may be found most completely stated in a charge to the jury which was quoted with approval by the United States Circuit Court of Appeals for the Eighth Circuit in the case of *W. V. Smith et al. v. United States* (1922) 284 Fed. 673. A pertinent excerpt from this approved charge to the jury is as follows:

"It is no enticement to ask a physician to write an illegal prescription, if you suspect that he might do it, and you want to find out if he does it, nor to ask a druggist to sell narcotics illicitly, because both of them know better, and if they are going to obey the law, why they won't do that in response to any form of petition or inducement, and it is perfectly within the rights of investigating officers to determine, by means that have been here disclosed, whether a party, or parties, are engaged in violation of the law, and if they are, to take steps accordingly, so that I wish to disabuse your minds of all this confusion that this, in itself, was such an unwarrantable offense on the part of the Federal officers that it relieves this offense charged, if you find any offense was committed, of its character as such offense."

It will be seen that the Bureau rule of enforcement practice to avoid illegal entrapment is well within the limits of the rule established by the courts.

The Narcotic Bureau has never sanctioned or approved the so-called reductive or ambulatory treatment of addiction for the reason that where the addict controls the dosage he will not be benefited or cured. Medical authorities agree that the treatment of addiction, with a view to effecting a cure, which makes no provision for confinement while the drug is being withdrawn, is a failure, except in a relatively small number of cases in which the addict is possessed of a much greater degree of will power than that of the ordinary addict. The following report of a special committee of physicians, which is understood to have been adopted by the American Medical Association, is quoted from the *Journal of the American Medical Association*, issue of June 14, 1924:

"Your committee desires to place on record its firm conviction that any method of treatment for narcotic drug addiction, whether private, institutional, official or governmental, which permits the addicted person to dose himself with a habit-forming narcotic drug placed in his hands for self-administration, is an unsatisfactory treatment of addiction, begets deception, extends the abuse of habit-forming narcotic drugs, and causes an increase in crime. Therefore, your committee recommends that the American Medical Association urge both Federal and State governments to exert their full powers and authority to put an end to all manner of such so-called ambulatory methods of treatment of narcotic drug addic-

tion, whether practiced by the private physician or by the so-called 'narcotic clinic' or dispensary.

"In the opinion of your committee, the only proper and scientific method of treating narcotic drug addiction is under such conditions of control of both the addict and the drug, that any administration of a habit-forming narcotic drug must be by or under the direct personal authority of the physician, with no chance of any distribution of the drug of addiction to others, or opportunity for the same person to procure any of the drug from any source other than from the physician directly responsible for the addict's treatment."

The following statement is quoted as an excerpt from an "introduction" by Dr. Morris Fishbein to a series of articles by various authors on "Indispensable Uses of Narcotics," published in the *Journal of the American Medical Association*, issues of March 14 to June 6, inclusive, 1931:

"Physicians may, by the exercise of more thought in practicing, do much to avoid censure in relation to narcotic addiction. They may substitute, whenever possible, non-habit-forming drugs in the place of morphine or other opium alkaloids. When narcotics are indispensable, however, as shown in this series of articles, no more should be administered than is necessary to achieve the desired end. Patients requiring daily administration should be seen often by the doctor and the amount of drug ordered or supplied should not exceed that required by the patient until seen again. Independence of administration on the part of nurses should be strictly limited to prescriptions and any change in treatment should be in writing."

For the views in disapproval of the so-called ambulatory treatment for drug addiction, we can find some support, at least by strong implication, in the language of a decision of the United States Supreme Court in the case of *United States v. Morris Behrman* (1922) 258 U. S. 280. The Supreme Court said in part as follows:

"Undoubtedly doses may be varied to suit different cases, as determined by the judgment of a physician. But the quantities named in the indictment are charged to have been entrusted to a person known by the physician to be an addict, without restraint upon him in its administration or disposition by anything more than his own weakened and perverted will. Such so-called prescriptions could only result in the gratification of a diseased appetite for these pernicious drugs, or result in an unlawful parting with them to others, in violation of the



act as heretofore interpreted in this court, within the principles laid down in the Webb and Jin Fuey Moy cases."

I take this opportunity to call attention to two or three of the more extreme cases of diversion of morphine by physicians for the gratification of drug addiction. One Dr. Thomas P. Ratigan, Jr., of Seattle, had been under investigation for a long period prior to 1935 because of the frequent visits to his office of numbers of known drug addicts. It was ascertained that the doctor dispensed regular quantities of morphine to these addicts by hypodermic injections for a fee which was usually \$1 per injection. During 1935 this physician purchased approximately 305 times the amount of morphine required and used by the average practitioner in the United States. During the period from January 1, 1932 to September 19, 1936, inclusive, he purchased a total of 445,980  $\frac{1}{2}$ -grain tablets of morphine, which he apparently dispensed by means of hypodermic injections to drug addicts. From January 1, 1935 to June 30, 1936, inclusive, 172 physicians and 23 hospitals, all registered in the practitioner class in Seattle, obtained for dispensing approximately 66 ounces of morphine, and during the same period Dr. Ratigan obtained for dispensing 295 ounces of morphine, or approximately four and one-half times the amount obtained by all the physicians and hospitals in the City of Seattle combined.

An extensive investigation which was concluded in Richmond in September, 1936, dis-

closed that four physicians in that city, within a period of 23 months, wrote 19,068 prescriptions for numerous drug addicts, calling for a total of 66 pounds of morphine. During the same period, an analysis of prescriptions on file in all drug stores in Richmond showed that some 325 other physicians prescribed for their patients only a total of approximately 4 pounds of morphine. In a case completed last year in Lynchburg, Virginia, one physician during a period from July 1, 1935 to January 6, 1938 issued about 3,840 prescriptions for narcotic drugs, for a total of more than 24 pounds of morphine. These prescriptions ranged from 15 to 90 grains of morphine each and were sold to narcotic drug addicts who flocked into Lynchburg upon learning of this source of supply.

The Bureau of Narcotics, in carrying out its duty to enforce the Federal narcotic laws, endeavors to avoid any action that might possibly harass or even inconvenience the conscientious law-abiding practitioner. It attempts to inform the profession relative to the technical requirements of the law and the regulations in order to forestall irregularities that otherwise might be committed unintentionally by the ethical practitioner through lack of such information. It must and does attempt to bring to the bar of justice those comparatively few practitioners who disregard the law and the ethics and high ideals of their profession by converting their offices into depots for the illicit distribution of narcotic drugs.

**300 X-ray Examinations per Hour.** A new method of X-raying the chests of large groups cheaply and quickly has been developed in Germany. It consists of photographing the fluoroscopic image on motion picture film. When developed, the strip of film is projected on a screen for interpretation. By this method two physicians, assisted by a crew of 10 men, examined at the rate of 300 per hour more than 10,000 men during a Nazi party celebration at Nuremberg. The device is not a substitute for the standard X-ray technique but is a means of "screening" and it promises the possibility of examining the whole nation.

*Abstract of article by H. HOLFELDER AND F. BERNER, Münchener medizinische Wochenschrift, 1938, 47.*

**Social Aspects of Tuberculosis.** The prevention of tuberculosis is not merely a public health problem but

also a powerful social and economic factor which affects the economic structure of the entire nation.

"At a time when all values have tumbled and numerous assets have to be classified as frozen, the health and productivity of the people remain the outstanding and most tangible resources of a nation and it would be the short-sighted policy of the penny-wise and dollar-foolish to curtail preventive health measures for the sake of economy," says Dr. Karl Fischel of Saranac Lake.

The tuberculosis problem is closely linked with other momentous issues of the day, and the tuberculosis death rate of the future is, therefore, bound to be affected by the solution of other problems, be it unemployment, inflation, commodity prices or disarmament.

*Abstract of article by KARL FISCHEL, Bulletin de l'Union contre Tuberculosis, 1939, 16.*



# APLASTIC ANEMIA DUE TO KEROSENE

## REPORT OF A CASE

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This condition was first described by Ehrlich in 1888 and very little has been added to our knowledge of the disease since that time. The only new development has been the study of the bone marrow in this as well as in other blood dyscrasias.

### ETIOLOGY

Two types of aplastic anemia are recognized: (1) idiopathic aplastic anemia and (2) symptomatic or secondary aplastic anemia. Since in the secondary types the cause is either a toxic substance such as benzene or benzol or a displacement of the hematopoietic tissue by neoplastic invasion of the bone marrow, it seems reasonable to suppose that some unknown toxic substance either chemical or bacterial is at fault in the primary types. A bacterial toxin seems not unlikely inasmuch as there is evidence of infection at a very early stage of the disease; fever, in fact, may be its first manifestation.

That more than one factor may be responsible is suggested by the fact that in certain cases presenting a typical aplastic blood picture the bone marrow shows evidence of hemopoietic activity. In these cases it seems probable that there is interference with liberation of the cells from the marrow into the circulation, or they may possibly represent more fulminating cases in which aplasia of the bone marrow has not had time to develop.

The secondary types of aplastic anemia may be due to a variety of causes, e.g.:

1. Chemical poisons, such as benzene, benzol, carbon monoxide gas, trinitrotoluol and arsenical compounds. No particular arsenical preparation seems to be at fault, since almost all varieties have been implicated.
2. Sepsis such as pneumonia, typhoid, septi-cemia, subacute bacterial endocarditis and many others.

3. Terminal stage of many blood diseases such as myeloid leukemia, pernicious anemia, tapeworm anemia, anemia of pregnancy, myelophthisic anemias, severe posthemorrhagic anemia.

4. Excessive exposure to X-rays and radioactive substances.

Many cases which are regarded as idiopathic might be found to be secondary if a more careful search for the causative agent were made. As pointed out by Graham-Rogers,<sup>1</sup> who made an extensive study of the effect of benzol and benzene on the blood, these two substances are used extensively and in such a great variety of occupations as those of dry cleaners, feather workers, milliners, printers, tinnerns, workers in rubber industries, tanners, varnish and paint workers, gilders and coke-oven workers. If only these two substances affect so many occupations, it seems likely when we consider the numerous substances involved that they may affect a very large percentage of the population. The part that allergy plays in the production of aplastic anemia has apparently not been studied.

### PATHOLOGY

Except for the typically completely aplastic bone marrow which consists essentially of nothing but yellowish-white fat in the marrow cavities, there are no characteristic pathologic findings. Occasionally hemosiderin deposits are found in the liver and elsewhere, the significance of which is not fully understood and may indeed be merely an accidental finding.

### CLINICAL PICTURE

The onset of the idiopathic condition is usually insidious and the only symptoms present are those due to the anemia. The most frequent complaint at the onset is of progressive weakness. Occasionally, however, the onset may be

sudden with a high fever. It occurs most frequently between the ages of 15 and 30, and affects females three times more frequently than males. Cases at both earlier and later ages have been reported; for example, Bruce<sup>2</sup> reported a case in a 2-year-old, Herman<sup>3</sup> reported a case in a 4-year-old, and Fontaine<sup>4</sup> reported a case in a 58-year-old. Many individuals who subsequently develop this as well as other essential blood disorders give a history of never having been strong, and this point combined with the fact that an enlarged thymus has not infrequently been found associated with the condition has given rise to the suggestion that these people may have a congenitally hypoplastic bone marrow.

Examination usually reveals an acutely ill, febrile patient who is very pale, often with a waxy pallor. The sclerae are white, never yellowish. The tongue appears normal. The liver, spleen and lymph glands show no abnormalities. Petechiae are present in practically all cases and the tourniquet test is positive. Hemorrhages from the mucous membranes are common, and disturbance of menstruation is frequent. Although examination of the abdomen usually reveals nothing, abdominal pain is a not infrequent complaint. Rarely ulcerative lesions are found in the larynx, but such ulceration is not found elsewhere.

The course of the disease is usually progressively downhill. The average duration of life is usually from 2 weeks to 3 months. Many patients remain febrile throughout the duration of the disease.

#### LABORATORY STUDIES

From the standpoint of diagnosis the two studies of the greatest importance are those of the bone marrow and of the blood. As pointed out, study of the bone marrow obtained by sternal puncture or biopsy shows an acellular fatty marrow which is easily recognized. More difficulty is experienced in those cases in which the marrow has apparently lost its ability to deliver the cells into the circulation or in which only part of the marrow is aplastic.

In order to understand fully the blood picture

in aplastic anemia, the evidences of bone marrow activity must be fully understood. The regenerative ability of the bone marrow is indicated by the presence of (1) reticulocytes, (2) polychromatophilia, (3) nucleated red blood cells (normoblasts), and (4) nuclear remains such as Howell-Jolly bodies and Cabot's rings. Further evidence of bone marrow activity is indicated by the appearance of immature white cells in the circulation. In the order of their maturity the following types may be present in the circulating blood when the bone marrow is active: (1) myeloblasts, (2) premyelocytes, (3) myelocytes, (4) metamyelocytes (juvenile forms), (5) stabforms (nuclei having only a single lobe), and (6) polymorphonuclear leukocytes (nuclei having 2 to 5 lobes). Any of these except the last are evidence of bone marrow activity and are not found in the typical case of aplastic anemia.

The typical blood picture is one in which there is a proportionate numerical reduction of all the formed elements of the blood. The red blood cells are astonishingly normal in appearance. In spite of very low total cell counts such as one million or even lower the cells remain normal in size and shape, the corpuscular volume, the corpuscular hemoglobin and the corpuscular hemoglobin concentration being all within normal limits. The color, volume and saturation indices also remain in almost all instances within normal limits. In the reported cases, however, the color index has varied from 0.3 to 1.7. The bleeding time is prolonged in most cases and retraction of the clot is greatly prolonged or absent. The coagulation time is normal.

The fragility of the red cells is somewhat peculiar inasmuch as the cells begin to break up in normal or weaker strength, but complete hemolysis occurs only in greater strength than normal.

The white blood cells are decreased in number, the leukopenia being due to an absolute decrease in the myeloid type of cell. The eosinophiles are usually absent. The decrease in the polymorphonuclear cells causes a relative but not an absolute increase in the lymphocytes. Im-

mature cells of the myeloid series are very rare. Monocytes are occasionally increased in the early stages.

The blood platelets are decreased or absent; when present there is a tendency for them to be larger than normal. It is the absence of platelets which causes nonretractility of the clot and the prolonged bleeding time.

In summary, the blood picture of aplastic anemia shows:

1. Proportional reduction of all formed elements of the blood.
2. Normal appearing red blood cells.
3. Normal volume index.
4. Normal color index.
5. Normal coagulation time.
6. Prolonged bleeding time.
7. Failure of retractility of the clot.
8. No evidence of activity of the bone marrow in spite of marked anemia.
9. Acellular bone marrow.

The gastric hydrochloric acid shows no demonstrable change.

#### DIFFERENTIAL DIAGNOSIS

The diagnosis of aplastic anemia is at times very difficult and is frequently made only at autopsy. As bone marrow studies during life become more common the diagnosis will undoubtedly be made more frequently ante mortem. Even having in mind, however, the typical blood picture outlined above, difficulty in differentiating this disease from others is a great problem clinically. The following diseases present the greatest difficulty in differential diagnosis: pernicious anemia, myelophthisic anemia, idiopathic thrombocytopenic purpura haemorrhagica, aleukemic leukemia and agranulocytosis.

Grove has described a simple test for the regenerative powers of the bone marrow which might be of help in some cases. He gave a few minims of adrenalin hypodermically and states that the platelet count will rise to normal in pernicious anemia, and that there will be a slight rise in thrombocytopenia, while in aplastic anemia there will be no rise at all. This test has not been confirmed by other workers.

Briefly expressed, the main points of difference between aplastic anemia and the diseases mentioned above are as follows:

| <i>Pernicious anemia</i>                                                                       | <i>Aplastic anemia</i>                                              |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1. Twice as frequent in men                                                                    | 1. Three times more common in women                                 |
| 2. Rare before 40 years of age                                                                 | 2. Rare after 30 years of age                                       |
| 3. Duration many years                                                                         | 3. Duration rarely over 3 months                                    |
| 4. Hemorrhage not common                                                                       | 4. Hemorrhage common                                                |
| 5. Color index more than 1                                                                     | 5. Color index 1 or less                                            |
| 6. Reticulocytes present                                                                       | 6. Reticulocytes absent                                             |
| 7. Lymphocytes normal in number                                                                | 7. Lymphocytes relatively increased                                 |
| 8. Macrocytosis                                                                                | 8. Normocytosis                                                     |
| 9. Poikilocytosis                                                                              | 9. Normal cells                                                     |
| 10. Anisocytosis                                                                               | 10. Normal cells                                                    |
| 11. Hemolysis present                                                                          | 11. No hemolysis                                                    |
| 12. Volume index increased                                                                     | 12. Volume index normal                                             |
| 13. Achylia gastrica                                                                           | 13. Normal gastric juice                                            |
| 14. Response to liver typical                                                                  | 14. No response to liver                                            |
| 15. History typical                                                                            | 15. No complaint but weakness                                       |
| 16. Sore tongue                                                                                | 16. Normal tongue                                                   |
| 17. Neurologic changes                                                                         | 17. No neurologic changes                                           |
| <i>Myelophthisic anemia</i>                                                                    | <i>Aplastic anemia</i>                                              |
| 1. Clinical evidence of primary disease                                                        | 1. No obvious causative factor                                      |
| 2. Existing remnants of bone marrow hyperactive and evidence of activity in the form of blasts | 2. Blast forms rare                                                 |
| 3. History longer                                                                              | 3. Shorter duration                                                 |
| 4. Rare before age of 40                                                                       | 4. Rare after 30                                                    |
| 5. Achromia                                                                                    | 5. Red cells normochromic                                           |
| 6. Poikilocytosis                                                                              | 6. Red cells normal                                                 |
| 7. Anisocytosis                                                                                | 7. Red cells normal                                                 |
| <i>Idiopathic thrombocytopenic purpura haemorrhagica</i>                                       | <i>Aplastic anemia</i>                                              |
| 1. Red cells decreased in proportion to hemorrhage. Decrease variable depending on bleeding    | 1. Progressive decrease out of proportion to evidence of hemorrhage |
| 2. Hemoglobin decreased in proportion to hemorrhage                                            | 2. Hemoglobin decreased in proportion to red blood cells            |
| 3. Polymorphonuclears above 50 per cent                                                        | 3. Polymorphonuclears very low                                      |
| 4. Lymphocytes normal                                                                          | 4. Lymphocytes relatively increased                                 |
| 5. Platelets reduced in all cases                                                              | 5. Platelets reduced, often late                                    |
| 6. Evidence of marrow activity                                                                 | 6. No evidence of marrow activity                                   |
| 7. Bone marrow normal                                                                          | 7. Bone marrow atrophic                                             |



*Granulocytopenia*

*Aplastic anemia*

- |                                                                    |                                                           |
|--------------------------------------------------------------------|-----------------------------------------------------------|
| 1. Onset acute                                                     | 1. Onset insidious                                        |
| 2. No pallor                                                       | 2. Pallor marked                                          |
| 3. No bleeding from mucous membranes                               | 3. Hemorrhage common                                      |
| 4. Red blood cells and platelets not affected                      | 4. All elements decreased                                 |
| 5. Occurrence at all ages                                          | 5. Most common between 15 and 30                          |
| 6. Jaundice in 50 per cent of cases                                | 6. No jaundice                                            |
| 7. Lesions of mucous membranes of throat, rectum and vagina common | 7. No lesions of mucous membranes except rarely in larynx |
| 8. Bone marrow study typical                                       | 8. Bone marrow atrophic                                   |

*Aleukemic stage of acute lymphatic leukemia*

*Aplastic anemia*

- |                                                                                     |                                          |
|-------------------------------------------------------------------------------------|------------------------------------------|
| 1. Onset acute                                                                      | 1. Onset insidious                       |
| 2. Lymphatic tissues hypertrophy                                                    | 2. No enlargement of lymphoid tissues    |
| 3. Ulceration of tonsils and pharynx common                                         | 3. Ulceration rare                       |
| 4. Study of blood smears shows:                                                     | 4. Abnormal lymphocytes rare             |
| 1. Marked increase in percentage of lymphocytes from 50 to 90                       |                                          |
| 2. Lymphocytes frequently very large cells with pale-staining nuclei (Reider cells) |                                          |
| 5. Red cells hypochromic and microcytic                                             | 5. Red cells normocytic and normochromic |

*Aleukemic stage of acute myeloid leukemia*

*Aplastic anemia*

- |                                                                                  |                                         |
|----------------------------------------------------------------------------------|-----------------------------------------|
| 1. Gums red, swollen and spongy                                                  | 1. Gums normal                          |
| 2. Necrosis in mouth and throat common                                           | 2. Necrosis not present                 |
| 3. Lymph nodes enlarged in some cases                                            | 3. No enlargement of lymph nodes        |
| 4. Spleen enlarged in some cases                                                 | 4. Spleen normal                        |
| 5. Anisocytosis, poikilocytosis and variation in staining reactions of red cells | 5. Red blood cells normal in appearance |
| 6. Numerous immature cells of the myeloid series                                 | 6. Immature cells rare                  |

SUMMARY

Idiopathic aplastic anemia is a rapidly fatal disturbance of the bone marrow, affecting particularly females between the ages of 15 to 30. The blood picture is characterized by a proportionate numerical reduction in all the formed elements of the blood and an absence of all

evidence of regeneration in studies of the blood smears and of the bone marrow.

We wish to report a case of aplastic anemia, probably due to kerosene, which would at one time have been regarded as a case of idiopathic aplastic anemia. In recent years there have been several reports concerning the toxicity of kerosene and petroleum distillates. These reports deal with the gastrointestinal, pulmonary, neurologic and dermal effects caused by the ingestion, inhalation and skin contact of kerosene. So far as we have been able to find there are no cases in the literature concerning the production of a severe blood dyscrasia by this product.

REPORT OF CASE

Mrs. R. McD., aged 59 years, mother of 5 children, was admitted to the Jewish Hospital, Philadelphia, on June 15, 1936. She had been in her usual state of good health until the middle of March 1936, when she noticed shortness of breath, weakness and easy fatigability, her nose bled several times without apparent cause and she discovered black and blue marks scattered over her body. These symptoms gradually progressed necessitating bed rest.

Her family and past history were essentially negative. No relative had ever suffered from a similar illness. Her children were all well developed and healthy. No previous bleeding tendency had been noticed and her menses ceased 15 years previously, without any recurrence of bleeding.

There was no history of contact with radium or X-ray and the patient had not taken any drugs containing the benzene ring. For a period of several months prior to the onset of her present illness, she had rubbed her legs with household kerosene. She did this nightly believing that the kerosene was a remedy for "stiff joints."

The patient was moderately obese, well developed and had a waxy pallor. The temperature was 98°F., the pulse rate 80, the respiratory rate 20, and the blood pressure 120/80. Numerous purpuric spots were present over her body. Dried blood was crusted in both nares. The dental hygiene was poor and there were several carious molars and pyorrhea alveolaris involving the upper and lower incisors and canines.

The heart and lungs showed no abnormalities. The liver was palpable 3 cm. below the right costal border in the midclavicular line. The spleen was not palpable and was not enlarged to percussion. Pelvic examination was negative. There was no edema and no lymphadenopathy. Neurologic examination revealed no abnormalities.

On first examination the red blood cells numbered 2,400,000, the hemoglobin was 45 per cent, the white blood cells numbered 4,800, the polymorphonuclears constituted 49 per cent, and the lymphocytes 50 per cent. The blood platelets numbered 9,600, the coagulation time was  $4\frac{1}{2}$  minutes, the bleeding time was over 15 minutes, and the clot retraction time was normal. Blood chemistry and urinalysis were normal. The tourniquet test was positive.

The patient was in the hospital for 4 months before succumbing to a terminal gas gangrene infection of her buttock. Frequent nose bleeds were encountered, bleeding sockets after extraction of carious and infected teeth were common, weakness and mental depression were marked. Purpuric spots were a constant feature, being present in the conjunctiva as well as at the site of intravenous injections and over the bony prominences.

The red blood cells ranged from 950,000 to 3,400,000; anisocytosis, poikilocytosis and nucleated red cells were seen several times. Hemoglobin varied from 14 to 64 per cent, the white blood cells showed a progressive diminution from 2,100 to 900 with a polymorphonuclear neutropenia predominating, the platelets never exceeded 10,000 and were usually below 3,000 in number, the reticulocyte count varied from 0.8 to 1.2 per cent, and the fragility test showed hemolysis beginning at 0.42 and completed at 0.30. The B.M.R. was plus 11 per cent. The coagulation time remained under 10 minutes, and the bleeding time was always prolonged.

Improvement of the patient's condition was noted only after transfusions and she gradually became weaker. On November 3, 1936, gas gangrene developed at the site of an intramuscular injection of whole blood in the gluteal muscles, and despite specific antisera, spread and caused her death 1 week later.

Many forms of therapy were used including direct and indirect blood transfusions two to three times weekly totalling 7,245 c.c. of blood, liver extract and thromboplastin intramuscularly, calcium gluconate intravenously, aolan (once), adrenalin twice on the assumption that it would stimulate the bone marrow, vitamin C, X-rays to the tibiae in stimulating doses, bone marrow and spleen extract orally and local hemostatic agents.

The autopsy revealed an extensive gas bacillus infection of the viscera including the heart.

The sternal marrow showed a marked aplastic state with the granular series represented by only an occasional myeloblast; myelocytes, metamyelocytes and neutrophils were entirely absent. The red cell series was represented by fairly numerous macroblasts and some megaloblasts, but normoblasts were almost entirely absent. No megakaryocytes were seen. Lymphocytes were noted. The appearance was that of a profoundly aplastic bone marrow particularly involving the formation of granular cells and platelets.

## DISCUSSION

The progressive hypocythemia of the peripheral blood stream and the aplastic bone marrow found post mortem confirm the diagnosis of aplastic anemia. The offending agent for this patient was profoundly toxic to the myeloblastic series and megakaryocytes of the bone marrow and less so to the megaloblastic cells. Not only are there individual variations in the susceptibility of the bone marrow to toxins, but there are quantitative and qualitative differences in the manner in which the three cell series react.

This patient was in contact with kerosene over a period of several months. In addition to the skin contact there was undoubtedly considerable inhalation of the fumes while massaging her legs. In the cases reported by Hayhurst,<sup>5</sup> the most marked were those whose skin was wet by the distillates. Kerosene contains 17 to 23 per cent aromatic (containing the benzene ring) hydrocarbons. Kracke<sup>6</sup> feels that benzene exerts its toxic effects through its products of oxidation, apparently orthoquinone and paraquinone. Benzene is oxidized to phenol which in turn is oxidized to catechol and hydroquinone. These two products are then changed, possibly by an enzyme phenolase found in the leukocytes to orthoquinone and paraquinone. The aromatic hydrocarbons contained in kerosene can be oxidized to phenol and follow the same changes as benzene. This probably occurred in our patient, producing the anemia.

## CONCLUSIONS

1. A case of aplastic anemia is presented.
2. Contact with kerosene, which contains aromatic hydrocarbons, probably caused the anemia.
3. Kerosene can be added to the growing list of substances toxic to the bone marrow.

## BIBLIOGRAPHY

1. GRAHAM-ROGERS, C. T., quoted by Ordway and Gorham, Oxford Monographs, 1930, 9, 219.
2. BRUCE, J. W.: Idiopathic Aplastic Anemia; Case Report. Arch. Pediat., 1927, 44, 657.

(Continued on page 160)

# PERNICIOUS ANEMIA TERMINATING IN AGRANULOCYTOSIS

## REPORT OF A CASE

CARL GOLDENBERG, M.D.

*Washington*

The unexpected turn of a pernicious anemia into a final agranulocytosis is rare, although a relative leukopenia is not uncommon in a great percentage of cases. Doubtless, it might be argued, the deficiency factor responsible for the development of pernicious anemia may well wield a powerful influence upon the granulopoietic system, and any additional damage would easily produce a complete agranulocytosis. Kracke and Parker<sup>1</sup> in 1931 called attention to the close relation of certain drugs and the outbreak of agranulocytosis; aminopyrine and its compounds were found by them and other investigators to be the chief offenders. Many cases have been collected in the meantime, and quite recently Kracke, in a summary of his clinical and laboratory experience, finds aminopyrine still in the foreground of causative agents, adding, rather significantly, sulfanilamide. According to his statistical findings, aminopyrine or any of its compounds is responsible for eighty percent of the cases of agranulocytosis traceable to drugs. In a recent clinical lecture, Fitz-Hugh<sup>2</sup> too emphasizes the acquired sensitivity of the leukocytes to a veritable host of drugs, and aminopyrine again heads the list.

In spite of an ever mounting literature on the subject, opinions are still divided on the difficult question of the true mechanism of this pathologic state. What produces in such a selective fashion an agranulocytotic condition? Necrosis of an organ, notably the tonsils and peritonsillar tissue, is not always present, and apparently develops only when the state of agranulocytosis lasts more than a few days. Secondly, infection supervenes, or perhaps the previous moderate infection (for which those drugs had been taken) assumes massive proportions, there being no defense bodies present in the blood.

Eisler<sup>3</sup> compares the drug reaction to a similar experience in producing experimental shock (anaphylactic). During the shock the granulo-

cytes disappear. If one continues to give additional doses of antigen, thereby going beyond the anaphylactic phase, the compensatory forces are paralyzed and irreparable agranulocytosis occurs. He concludes that drugs such as pyramidon produce the same effect. In other words, the patient is sensitive from the moment he takes the drugs or becomes sensitized eventually. Kopet and Goodrich<sup>4</sup> come to the same conclusion as a result of their experiments; they exclude barbituric acids and their simple derivatives from the list of toxic agents. It is the compound containing the benzene ring with its attached amine (NH<sub>2</sub>) which produces the deleterious effect on the bone marrow. Baeyer<sup>5</sup> advances a new and very interesting viewpoint: the disturbance does not cause a depression of the granulopoietic mechanisms but produces a hindrance of orderly bloodflow. The fixed cells do not enter the fluid medium; something prevents their entrance.

The following case is offered as an additional indictment against aminopyrine.

## REPORT OF CASE

Mrs. L. L., 58 years old, a housewife, stated that during the month of June, 1935, she noticed an increasing numbness, at first on her right and left fingers, later spreading to both hands and feet. When walking, 'her feet became entangled.' She lost her sense of orientation. Shortly afterwards this numb feeling embraced the legs, the hips and both arms, and became associated with sharp pains, particularly felt as girdle pains around the abdomen. Incontinence of bladder and rectum followed. Antedating these symptoms she had periods of profuse diarrhea but noticed no blood in the stools. Eyesight, smell and taste remained intact; once in a while she noticed what she described as a cankerous condition in her mouth and on her tongue. She lost weight and strength. In 1915 she had had a hysterectomy. There had been no pregnancies. No serious infections in the past were recalled.

Examination on August 19, 1936 revealed a bedridden, thin female patient, mentally quite alert. Her skin looked pale, but did not show the characteristic lemon



color. Scattered areas of pigmentation were found on both hands and on the chest. Both hands showed the hypertrophic type of arthritis. Anisocoria and poor light reflexes were present bilaterally. A small ulceration was present in the left buccal mucosa, covered with a yellow pseudomembrane. The tip and both angles of the tongue were distinctly atrophic. The pulse was 78, regular, the temperature 98° F., and the blood pressure 104/70 in both arms. The heart and peripheral circulation showed nothing grossly abnormal. Pelvic examination showed evidence of a hysterectomy. Tonus of the sphincter ani was very poor and incontinence was evident. The patient was quite atactic; Babinski's sign was present on both sides. The sense of coordination of both the upper and lower limbs was completely lost. After her transfer to Garfield Hospital the blood status revealed hemoglobin 47 per cent, red blood cells 2,350,000 with marked macrocytosis and poikilocytosis. The leukocytes numbered 5,130 with 53 per cent polys and 47 per cent lymphocytes. The gastric analysis showed a complete achlorhydria even after the use of histamine.

A more detailed neurologic examination by Dr. Freeman added a reduction of the vibratory sensibility; in fact, it was entirely lost over the lower limbs and even at the pelvis. Subacute combined degeneration of the spinal cord, the hematological findings, the complete achlorhydria, the sore tongue and its partial atrophy led inevitably to the diagnosis of pernicious anemia.

In view of the severity of the case large doses of liver extract were given by mouth as well as by intramuscular injection during the first 2 weeks.

A steady rise in hemoglobin and erythrocytes, with ample response of reticulocytes and a temporary rise in leukocytes, resulted. Within one month, however, the number of white blood cells fell to a level of 5,000 and remained fairly constant throughout the course of the disease. It seems doubtful to me to ascribe the initial rise of the white cells to the vigorous liver therapy; a moderately severe cystitis was present at the onset, and with the return of controlled bladder and rectal function the symptom subsided. A few months later the patient began to interest herself again in housework and writing; it was most gratifying to see the hands and arms gain back most of their sensory and muscular activities. The patient could handle objects such as needles and pencils with good coordination. The legs, however, got worse; contractions and marked lymphedema added to the discomfort. The most persistent symptom proved to be the girdle pain and the excruciating shooting pains in her legs. It made the use of sedatives and finally opiates necessary. At first a mixture of pantopon ( $\frac{1}{2}$  grain) and sedormid ( $1\frac{1}{2}$  grain) was used. While there were frequent intervals of painless days in the beginning (with the drugs omitted on those days), the pains became more frequent and more intense later on, so that the sedative had to be given almost daily and in variable

quantities (average 4 to 5 capsules). Instead of sedormid, phanodorn ( $\frac{1}{2}$  grain) and aminopyrine ( $\frac{1}{2}$  grain) were added to the pantopon.

The daily amount of liver extract was between 120 and 150 cc.; with it the erythrocytic balance was well kept to the end. Repeated checks on the white cell counts revealed no untoward effects. In short, the blood picture remained monotonously stable. However, during the month of January 1938 the clinical picture, hitherto so stable, began to change. The patient appeared confused and disorientated; she refused to eat properly and began to skip her liver therapy. As I was later told, she increased her sedative mixture at will, and against any proscription would take as many as 10 capsules daily, sometimes even more than that. Toward the end of February she complained of soreness in the mouth, an increasing general malaise, and increased frequency of micturition. The blood picture on February 15 showed 80 per cent hemoglobin, 4,800,000 red blood cells and 5,000 leukocytes. On March 5 her temperature rose to 102°F., and the pulse rate was 102. She was stuporous and her face was flushed and moderately jaundiced. There was considerable meteorism. The white blood cells had fallen to 1600, with 8 per cent polys, 91 per cent lymphocytes and 1 per cent monocytes. The red cells were still abundantly present. Pentnucleotide and liver extract were given intramuscularly. However, the patient went rapidly downhill. The throat appeared very dry and intensely red, and the edges of the uvula showed distinct, discolored necrotic areas. Death occurred on March 9.

An autopsy was performed by Drs. Lindsay and Freeman on March 10. The liver was moderately congested with advanced central degeneration; the adjacent cells frequently contained brown granular pigment, and there was moderate general fibrosis, rather marked in the trabeculae about the bile ducts with an occasional small focus of leukocytic infiltration. The spleen was intensely congested with extreme replacement of the usual splenic pulp by red blood cells. There was marked fibrosis in many areas with hyalinization involving the capsule, the trabeculae and the walls of the blood vessels. Several small foci of actual necrosis were present. The kidneys showed advanced degeneration of the tubular epithelium and extensive fibrosis. Many of the tubules were lined by a fine brown pigment deposit, apparently within the epithelial cells, chiefly at their bases. Many blood vessels and glomeruli were completely occluded by fibrosis and many others were partially affected. The bone marrow was reduced, the marrow cavities containing large areas of vacuoles, presumably fat. The cellular structure of the marrow was characterized by an abundance of red blood cells, a considerable number of megakaryocytes and a variable number of round cells (myelo-

*(Continued on page 160)*

ABSTRACT OF PAPER READ BEFORE THE  
SECTION ON NEUROLOGY AND PSYCHIATRY  
OF THE SOCIETY, DECEMBER 1, 1938

"HYPOCHONDRIASIS," Solomon Katzenelbogen,  
M.D., Saint Elizabeths Hospital.

The term hypochondriasis is being used to cover a wide range of pathologic conditions. Kraepelin states that hypochondriasis is either a component of psychotic syndromes or is a form of neurasthenia or psychasthenia. Freud places hypochondriasis in the group of actual neuroses, which group also includes anxiety neurosis and neurasthenia.

Dr. Richards regards hypochondriasis as a condition in which preoccupation with health and varied bodily complaints are the main features.

This study was guided by the following understanding of hypochondriasis or hypochondriacal attitude: persistent preoccupation by nonpsychotic individuals with their bodily health without any apparent foundation, or excessive preoccupation with existing bodily disorders, that is, by far out of proportion with their seriousness.

The outstanding findings in this study may be briefly summarized as follows:

1. *Complaints of the patients.* Out of 51 male and female patients, 30 referred their troubles to the abdominal organs, 20 to the head, 10 to the heart, 10 to general weakness and tiredness, 10 to backache, and 8 to insomnia. A great variety of other complaints were relatively infrequently observed. A comparative study of the complaints in our 25 male and 26 female patients shows that in the latter they center more frequently on the digestive system (gastrointestinal troubles in 17 and liver and gall bladder troubles in 3 patients), and less frequently on backache than in the former. Insomnia is more frequent in the females than in the males. Another feature worth noting is that in the female patients the complaints are more numerous, more colored by affect than in the male patients. Finally, in some of the male and female patients the diagnosis of monosymptomatic hypochondriasis is warranted.

2. *Immediate event preceding the onset of the patients' difficulties.* Thirty-seven out of the 57 patients were positive in attributing the onset of their troubles to certain events: well or ill-defined somatic conditions, physical traumas with no consecutively elicitable organic structural or even functional disorders and multiple environmental factors. Concerning the physical condition it is noted that an illness first limited to one organ is usually followed by very diffuse complaints referred to organs which might not have been involved at all in the primary illness.

As to the environmental factors, if certain occurrences were immediately responsible for the onset of the pa-

tients' difficulties, the subsequent advent and fixation of their hypochondriacal condition were fostered by their individual backgrounds and environmental influences to which they were exposed following the beginning of their troubles.

3. *Personality.* This study does not permit one to attribute distinctly characteristic personality traits to hypochondriacal patients. However, such personality features as stubbornness, overconscientiousness, sensitivity, figured quite frequently.

4. *Environmental influences.* Unfavorable environmental circumstances—domestic troubles, living with chronic complainers, taking care for long periods of invalid parents and relations, unpleasant working conditions, unwholesome sex life—obviously played an ominous rôle in the development of the complaints in many of our patients.

5. *The patients' reactions to illness and difficulties.* Habitual overconcern about one's health and excessive reactions of body concern and complaints even to relatively minor illnesses or to more or less significant life difficulties were present in most of our patients for many years, if not throughout the major part of their adult life.

6. *Treatment.* The primary concern was, of course, to learn about the somatic condition of the patient as much as it was possible to learn in using judiciously the available methods of investigations. These examinations served a twofold therapeutic purpose: one to inform the physician as to whether or not any special medical or surgical therapy was indicated; the other therapeutic value lay in the fact that the patient saw that his difficulties were given serious consideration. This contributed to gaining the confidence of the patient by the physician and thus establishing a good rapport between them, necessary for the treatment.

The psychobiologic treatment is essentially based on the principle of finding out what is wrong with the patient, of uncovering as far as possible the facts within and without the patient which may reasonably be considered as dynamic factors in his pathologic condition, and of utilizing the facts with the ultimate goal of correcting what can be corrected.

Thus, in evaluating the complaints of the patient not on the basis of theoretical considerations and not only on the basis of physical and laboratory investigations, but also in the light of the circumstances under which the difficulties originated and developed, one does justice to more dynamic factors than in using treatments based exclusively on physical and laboratory examinations, and leaving out of consideration personality difficulties and environmental influences.

This study was carried out in the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore, Md.



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### THE PRESIDENT'S MESSAGE

#### RESPONSIBILITY

Our people are characterized by three traits—great energy, resourcefulness for invention, and capacity for organization. Without organization, energy is dissipated and lost, invention futile and capacity paralyzed. The organized institution by developing organs for special function focuses energy, coordinates invention and releases its full capacity for purposeful action. However, no mechanism is so perfect and no institution so ideal but what it requires careful attention to its functioning. Operation and care may be delegated to custodians, but ultimate responsibility rests upon the owner.

Our institution, The Medical Society of the District of Columbia, consists of and is owned by about one thousand doctors, active members of the organization. This is a true democracy. In order to become a member and share in its benefits one must show certain qualifications and voluntarily assume certain obligations and responsibilities specified in the published Constitution and By-laws signed by the member. Officers, committees, boards, temporary custodians (organizations of special function) perform their prescribed duties under rule and authority, according to their best judgment and with good intentions.

At regular business meetings committees report action and make recommendations which

are accepted or rejected as by the whole Society. Yet there are some occasions when important decisions are made with a bare quorum or at best one-fourth of the active membership present. Now, members may avoid duty and relinquish privileges, but they can escape neither the responsibility for nor the consequences of the actions of their authorized custodians. It, therefore, behooves members to be present, speak on the question, and vote their decision. Better is present wisdom in council than late carping in the cloakroom.

Who is the custodian of the custodians?

WILLIAM J. MALLORY, M.D.

### AN AUSPICIOUS BEGINNING

There were few of those responsible for the conduct of the 1939 Annual Scientific Assembly who were not concerned about the scientific and financial success of the meeting. It was the first time that the Assembly had been held outside the Society's building. The three-day session was also an innovation. However, now that it has been held and brought to a successful conclusion, there is every justification for satisfaction.

The records show that nearly one thousand physicians and guests registered, including a number of physicians from nearby states. Every one in attendance seemingly was enthusiastic and pleased with the excellent scientific program which was offered. The best indication of this was the fact that the hall in which the meetings were held was crowded up to the last moment each day. The scientific and technical exhibits were also thronged. It was a heartening sight for those who were in the least dubious before the Assembly was held.

To give credit to all those who made the Assembly possible would occupy too much space. The Chairman of the Committee on Arrangements together with the chairmen and members of subcommittees all gave generously of their time. No effort was spared which would contribute to a successful meeting. They are deserving of the highest praise and the Society is not only deeply indebted to them but also to



the physicians who appeared on the program from outside the city and in the District.

Now that we have had the experience with a meeting of this type, the membership can count on it being more successful the next time. Upon recommendation of the Executive Board and with the approval of the Society, the next Annual Scientific Assembly will be held in October, 1940. The reason for this is that it is very difficult to obtain hotel facilities in the Spring, there being many other meetings here at that time of the year. We are sure that all our members will look forward to the next Assembly with pleasurable anticipation.

### THE PUBLIC SEEKS INFORMATION

Not infrequently a doctor is heard to remark, "I am tired of hearing about medical economics. It is time to forget it. Too much has been said about it already."

We have a suspicion that very often the doctor who makes this remark is not too well informed. More than likely he is not interested and therefore does not wish to be bothered. Whatever the reason, it is true that a vast amount of material on this subject has been presented to the medical profession. Undoubtedly, a larger number are informed on economic problems of medicine today than previously.

There is another phase of this situation which should receive the serious attention of the medical profession and that is the interest which is being shown by the public in all matters relating to medical care. This has largely been stimulated by numerous studies relating to medical care which have been made by professional and nonprofessional organizations and the aggressive and vocal contentions of groups who urge the need for radical changes in medical practice. These have received wide publicity both through the press and on the air.

The question arises whether the medical profession has carried its message to the people as effectively as might be done. A few experiences which we have had would lead us to believe that methods adopted might be improved upon. For example, it is not unusual for medical organiza-

tions to receive calls from students attending colleges stating that there is ample literature available in their libraries written by those whose views do not coincide with those of the medical profession. However, material setting forth the medical viewpoint is meager.

Not long ago we had occasion to go to a public library in Washington and, as a matter of interest, examined the index to learn what books on medical economics were available. We found listed about fifteen volumes, only one of which stated the position of the majority of the medical profession.

These experiences and others of a similar nature emphasized to us a need which should be met. We have recently been informed that the Bureau of Medical Economics of the American Medical Association, which has issued many excellent informative pamphlets, will compile some of them in book form. In passing, it is surprising to note how few lay authors have interested themselves in the doctor's viewpoint. A great opportunity, it would seem, would offer itself to them. That, however, is another matter. What we should concern ourselves with, it would seem at the present time, is to see to it that the growing number of people who are interested in the economics of medical care have an opportunity at least to familiarize themselves with the views of the profession.

### PERTINENT PARAGRAPHS

At its business meeting on April 5, 1939, the Society authorized a canvass of the Society to determine the number of physicians who would subscribe to Group Hospitalization, Inc. Because of the pressure of work in the Society's office, the canvass has not been made but it will be in the next few weeks.

It would seem that physicians, despite the fact that special consideration is shown them by hospitals, would find membership in Group Hospitalization to their advantage. Conferences have been held with Mr. E. J. Henryson, Director of Group Hospitalization. He has taken the matter up with his Board of Directors, who, he reports, are very favorably inclined to the idea.

Numerous bills have been introduced in the current Congress which relate to health and medical care. These are of interest to every physician. At the present time hearings are being conducted before the Senate Subcommittee on Education and Labor on the so-called Wagner Health Bill. It is hoped that members of the Society will follow these hearings and the detailed accounts in regard to them in the press or, if possible, attend in person.

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Dr. James C. Sargent, past President of the State Medical Society of Wisconsin, who was the speaker at the public meeting which was conducted during the Annual Scientific Assembly, made an excellent impression upon his audience and many favorable comments have been heard about his address, the subject of which was "This Our Oath." The audience was not as large as was expected, due to inclement weather. This was disappointing. However, Dr. Sargent gave a condensed version of his address afterwards over Station WOL.

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It would appear that those charged with preparing headlines for some of our local newspapers are more concerned with stimulating reader interest than accuracy. Often the headlines have nothing to do with the reading matter of the newspaper article to which they refer. This has been noticeable lately in regard to medical news. It is perhaps one way of attracting attention to a news article. However, it is hardly fair to those who are directly involved.

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Several inquiries have been received at the Society's office regarding Mutual Health Service. Inquirers desire to know when the Service will be put into operation. For the information of our members, the program has been delayed because of the work in connection with the Annual Scientific Assembly and the Annual Business Meeting. However, the completion of the program and its operation will be advanced as soon as possible. Before this appears, steps will have been taken to inaugurate the Service.

Vacation time is here again. However, there will be no lull in activities at the Society's office during the Summer because of the projects now under way which must be completed. It is certain that when the Society reconvenes in the Fall officers will have an interesting report to make.

## TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The meeting of the Washington Society of Pathologists was called to order by the President, Dr. J. W. Lindsay, at 1:30 p.m., Saturday, March 4, 1939 in the Army Medical Museum. There were 28 members and 2 guests present. Captain DeCoursey introduced Captain G. F. Clark of the Navy. Colonel Ash presented an old member, Lt. Col. James B. Mann, who has come back to duty at the Museum. The following were unanimously elected to Associate Membership: Captain Kenneth F. Ernst, Army Medical Center, and Dr. S. B. Prevo, George Washington University Medical School. Colonel J. B. Mann was transferred to Active Membership.

### *Presentation of Cases*

**Drs. J. W. Lindsay and William L. Vogt** presented 25 microscopic slides from the case of a 63-year-old white man who came into the hospital complaining of weakness, swelling of his face, neck and left arm, morning edema of the face for 5 weeks, and the appearance of small glands in the neck followed by cervical edema. An X-ray examination on January 6, 1939 showed a tumor of the chest extending out from the mediastinum in the upper third of the right lung, and obliteration of the costophrenic angles by adhesions. The blood count on January 4, 1939 showed 4,180,000 red blood cells, 68 per cent hemoglobin, and 8,500 white blood cells with 1 myelocyte. Urinalysis was essentially negative on two occasions. On January 7, 1939 X-ray treatment was begun. However, he grew steadily worse and died. At autopsy, sections were made of the tumor in the mediastinum and a tumor mass 1 cm. in diameter was found in the medulla of one adrenal. The gross anatomic diagnoses were bronchogenic carcinoma, right upper lobe, with lymphadenopathy of adjoining bronchial lymph nodes; toxic myocarditis; hypostatic congestion of the lungs; emaciation and adrenal tumor.

**Dr. H. E. Ragle** presented 25 microscopic slides from the case of a 45-year-old negro who complained of severe nocturnal pain in the sacrum for the past 6 weeks. An X-ray examination showed a markedly distorted pelvis without evidence of neoplasm. There was a well-defined mass, 5 by 7.5 cm., in



the right pulmonary hilar region. Physical examination revealed nothing further. A mass 6 by 4 by 1.8 cm. was removed from the sacrococcygeal region, September 6, 1938. The pathologic diagnosis was chordoma. Grossly the mass was rather white and somewhat elastic. Microscopic sections of the tumor from the sacral region showed malignant cells of epithelial nature arranged in cords, islands and acinar structures. Many of the cells have immense vesicular nuclei with large foamy cytoplasm. Some of the cells also show vacuolization.

**Dr. Robert F. Golden** presented 25 microscopic slides from the case of a 50-year-old woman who had a total hysterectomy and salpingo-oophorectomy. The diagnosis at that time was chronic salpingitis, fibroid myomata of the uterus, and chronic salpingo-oöphoritis. Four years later a laparotomy was performed and a diagnosis was made of carcinoma of the right ovary. Two full courses of X-ray treatment were given, but death occurred during the following year. At autopsy the entire abdomen was filled with large and small tumor masses; the peritoneal surface was entirely covered with masses of some white and some hemorrhagic material. They filled the entire pelvis. The right ovary and tube could not be identified. Histologically, the tumor appeared to be sarcoma of fibrous, neurogenic or muscular origin.

**Dr. Roger M. Choisser** presented 25 microscopic slides from the breast of a white woman 81 years of age. Two weeks before admission to the hospital she fell and subsequently became drowsy and then comatose. No history could be obtained relative to a tumor found in the breast. Examination disclosed the blood pressure to be 240/70, but enlargement of the heart was not demonstrated. A mass, the size of a golf ball, was found in the upper and outer quadrant of the right breast. The nipple was not retracted and the mass was not definitely attached to the skin, although it was rather firmly attached to the bony chest wall. No axillary or supraclavicular nodes were palpable. The clinical diagnosis was hypertension with a cerebral vascular accident. At autopsy the diagnosis was confirmed by the finding of small granular kidneys showing microscopic evidence of arteriolar sclerosis, and by the finding of an enlarged heart without valvular insufficiency. There were two areas of cerebral softening taken to be infarcts. The mass in the breast weighed 85 grams and consisted of glistening white tissue which appeared to infiltrate the fat about it. The other breast was normal. The axillary and supraclavicular nodes were not enlarged, and microscopically they showed no evidence of neoplastic invasion.

Although microscopically the breast tumor resembled an ordinary scirrhous carcinoma, further study showed many inflammatory cells, well-defined ducts, and no invasion of the surrounding tissue. The diagnosis appeared to be plasma-cell mastitis.

**Captain R. M. Thompson** presented microscopic slides from the case of a 19-year-old man who presented a small, elevated, yellowish-pink nodular lesion on his forehead. He had first noticed the lesion 5 years before. Growth was slow. The excised specimen presented an elliptical piece of skin and subcutaneous tissue 25 by 16 by 15 mm. Protruding above and in the center of the skin surface was a coarse granular,

slightly elevated, nodular tumor, 8 by 5 by 4 mm. The center was umbilicated. Microscopically, the sections showed a nodular skin lesion covered by an irregular area of epidermis showing moderate hyperkeratosis. In the dermis were several cystic areas of varying size and shape, the epithelial lining of which showed a definite papillary adenomatous arrangement of the basal cells. The outer layer of the cysts was composed of nonremarkable squamous pavement epithelium. The cyst was filled with a pale pink granular material. This is a rather uncommon skin lesion well known to the dermatologists. It is of sweat gland origin and is known as a papilliferous hidradenocystoma. This tumor is a definite neoplasm and not just simple retention cysts. Syringocystadenoma, papilliferous, is another name for it.

**Dr. H. E. Ragle** presented 3 slides of a 30-year-old white man who for the past 7 months had vomiting spells and symptoms of intestinal obstruction. The blood count was normal. At laparotomy the ileum for about 4 feet from the ileocaecal valve was covered with a plastic exudate. This part was dissected. In the lymphoid tissue there were calcified areas suggesting parasites. There was no tuberculosis here.

**Dr. George Tolstoi** presented microscopic slides from a 35-year-old woman who had noticed a nodule on the foot for about 6 weeks, during which time the growth was quite rapid. She had no enlarged lymph glands and the central part of this tumor was very soft and almost necrotic. It had a definite capsule and was fairly easily removed. The tumor was about 5 cm. long and 3 cm. across. Histologically, it suggested malignant melanoma.

Dr. Tolstoi also presented microscopic slides from the case of a woman 51 years of age who came into the hospital with a tumor in the left breast. The nipple was definitely retracted and a simple mastectomy was done. Beneath the retracted nipple there was a large whitish dense mass. She had large glands under the arm which were white in appearance. Microscopically, the tumor was a duct-cell carcinoma.

**Dr. Lester Neuman** presented a slide from a tumor of the stomach of a 45-year-old woman who had considerable gastric disturbance. The clinical diagnosis was gastric ulcer. At operation a tumor about the size of a walnut projected into the cavity of the stomach. There was one small ulceration in the middle of this tumor. Microscopically, the tumor resembled a lipoid type of carcinoid tumor like that seen in the appendix, in which the cells are quite large and foamy, and when properly stained are filled with fats and lipoids. Carcinoid, hypernephroma and aberrant suprarenal tissue were considered.

**Lt. Col. J. E. Ash** presented a slide from the University of Indiana Medical School of a native Indiana boy, aged 9 years, who had had pain in the abdomen, particularly the upper left quadrant, a continually elevated temperature, and swollen glands in the neck. The onset was about 5 weeks before admission. The patient seemed to have a slight cold. Soon after this he began to complain of abdominal pains and had a temperature that ranged around 103°F. He had pollakiuria with nocturia. Four days before admission he rapidly developed marked swelling of the cervical lymph nodes which



were only slightly tender. On admission he was extremely ill with a temperature of 106°F. The skin was hot and dry. There was bilateral enlargement of the cervical lymph-nodes extending from the angle of the jaw to the supraclavicular region, which were only slightly tender. He had a rather brassy, nonproductive cough. There was a suggestion of mediastinal widening. The abdomen was moderately distended. The liver was enlarged to 6 cm. below the right costal border and was firm and not tender. The spleen was enlarged to approximately 2.5 cm. below the left costal border. The red blood count was 4,120,000; the white cell, 26,700. X-ray films of the chest showed marked mediastinal widening. Smears from malarial parasites were negative. Microscopically, *Histoplasma capsulatum* was demonstrated in endothelial cells in a cervical lymph-node and in polymorphonuclear leukocytes in the peripheral blood.

**Captain Elbert DeCoursey** reviewed 2 cases which had been shown at a previous meeting. One was a granuloma of

the eye and the other was histoplasmosis in a Virginia baby. Dr. W. A. DeMonbreun of Nashville, Tenn., stated that he regarded the latter case as histoplasmosis. The parasites in the eye, he thought, were slightly larger and their capsules or cell membranes thicker than is usual in *Histoplasma capsulatum*; also he could not make out a blepharoblast in the parasites. Dr. Henry E. Meleney also agreed on histoplasmosis in the case of the Virginia baby. Dr. Lewis B. Bates, chief of the Board of Health Laboratory in the Canal Zone, the laboratory in which Darling did his original work, feels that the parasites in the eye granuloma are *Histoplasma capsulatum*.

**Dr. F. W. Farrar** presented a microscopic slide of experimental Leishmaniasis showing *L. donovani* bodies in a hamster's spleen.

The meeting adjourned at 3:30 p. m.

### THIS OUR OATH\*

JAMES C. SARGENT, M.D., *Clinical Professor of Urology, Marquette University School of Medicine, and Past President of the State Medical Society of Wisconsin*

With hardly a change in word or phrase, the age-old Oath of Hippocrates found its way into one after another of the tongues of man until it came to be, in fact remains to be, the litany of medicine wherever it is practiced. So much a truism is this that a physician of whatever stock may travel wherever he will over the face of the globe today and find that there he is expected, when serving the sick, to conform to substantially the same rules of conduct as those which governed whence he came.

What a commentary, this! Surely it can mean nothing less than that here in the succinct formulary of a learned physician of long centuries back there are written certain rules of professional behavior which are as sound as firmament itself, as everlasting as time.

"I SWEAR BY APOLLO THE PHYSICIAN,  
AND AESCULAPIUS, AND HEALTH, AND PAN-  
ACEA, AND ALL THE GODS AND GODDESSES  
THAT, ACCORDING TO MY ABILITY AND  
JUDGMENT, I WILL KEEP THIS OATH."

\* \* \* \*

I SWEAR THAT I WILL "TEACH THEM  
THIS ART, IF THEY WISH TO LEARN IT, WITH-  
OUT FEE OR STIPULATION."

\*Radio talk delivered over Station WOL, April 26, 1939—a condensed version of the address given before the Public Meeting of the Society during the Annual Scientific Assembly.

At the turn of the century there were more medical schools in the city of Chicago alone than exists today in all North America.

Truly there is nothing which the American Medical Association has yet accomplished that stands more to its lasting credit than weeding out these dozens upon dozens of fourth rate night schools and diploma mills. Through its Council on Medical Education it classified all medical colleges based upon the preliminary education required of their incoming students and upon the type and scope of the teaching that their graduates received. With such information made easily available to those contemplating the study of medicine, the bloom soon faded from the diploma racket. Complementing this work of the parent national association, each of the several state societies secured the enactment of a Medical Practice Act into which was written certain educational requirements prerequisite to licensure. Thus was the public given final guarantee that none would be allowed to practice medicine except those who had been thoroughly trained. Through these two efforts, organized medicine in America has succeeded in establishing and then steadily raising the standards of medical education and licensure until our young doctors of today rank head and shoulders above any the world has ever known.

I SWEAR THAT "I WILL NOT CUT PERSONS LABORING UNDER THE STONE, BUT WILL LEAVE THIS TO BE DONE BY MEN WHO ARE PRACTITIONERS OF THIS WORK."

It is a far cry from the primitive surgery of ancient times to that of today but through the age that intervenes there has been no change in the fundamental hippocratic dictum insisting that knowledge, experience and ability must stand pre-requisite to performance when human life is in the balance. The laws governing medical practice which have been set up by the legislatures of our several states authorize and permit each newly licensed physician to begin at once to "practice medicine, surgery and obstetrics." However, his peers do not—that is, not without certain proper limitations. Of course, much of routine sickness care is well within the capabilities of a doctor from the very day of his graduation. If he aspires to do major surgery, however, he has a long and difficult road before him—one which, by his own conscience and through the friendly insistence of his colleagues, he has yet to travel. He must continue beyond his internship and through several years as a resident house surgeon at some accredited hospital where he can be trained under an organized teaching staff. Or, perhaps, he may have the good fortune to gain the preceptorship of an older surgeon under whose watchful eye his earlier steps can be taken with safety. In all events, the beginning of his surgery is done in one way or another under the friendly advice and scrutiny of his more experienced colleagues. So it is at least if he is to be allowed to work in the class "A" hospitals of America—hospitals whose staff organization and professional standards meet the exacting requirements which the American Medical Association and the American College of Surgeons have prescribed.

This brings up the whole subject of the control which each hospital staff holds over the physicians whom the hospital is to serve. In the City of Washington this is an especially burning issue today, and, I might add, it is equally burning and for precisely the same cause back in Milwaukee. The question is enormously involved and, except for its ethical aspects, entirely beyond the scope of this address. Suffice it merely to remark that it should be clear to everyone just what the consequences will be if present efforts succeed in destroying this means of keeping every doctor who would serve the danger-

ously sick under rigid professional control. And the tragic thing about it all is the fact that in these efforts the public is actually being led to doubt the motives of the great rank and file of high-principled physicians and surgeons making up the hospital staffs and the medical societies of this and other similar communities throughout the land.

I SWEAR THAT "I WILL FOLLOW THE SYSTEM OF RÉGIME WHICH, ACCORDING TO MY ABILITY AND JUDGMENT, I CONSIDER FOR THE BENEFIT OF MY PATIENTS...."

During the Civil War far more of the boys in blue and in gray died of typhoid fever than from bullets. Whenever humans have been herded together in emergency camps the danger of typhoid always has been great. Still and all, it flourished too in the open countryside. In fact, before effective control was accomplished, it was so widely distributed and of such common occurrence that a very substantial share of the income of the family doctor in those days came from treating "the fever." Unlike colic, quinsy or the croup it hung on—and paid well. Yet there wasn't a doctor in a thousand who did not loathe the disease—loathe it for the human misery and suffering that it bore. And loathing it as they did, it was they who, through endless teaching and preaching and prodding, cleaned up the cesspools and covered the sewers of America ".... for the benefit of my patients."

And this is but one of a list of diseases far too long to relate here—diseases that have been driven out of the private practice of medicine by the doctor himself because, written into the guiding tenets of his professionalism, has been a canon held inviolate for centuries. His own business considerations hold no standing whatever. He is committed without the slightest equivocation to that régime which is ".... for the benefit of my patients...." Where else in all human endeavor is the equal of that to be found?

Then, too, a collective significance has always attached to this stipulation. Not alone has it bound the individual to this lofty submission before his own judgment and conscience but it has demanded absolute subjugation of physicians within a group to the combined judgment and conscience of the group itself. And a reason lies in this altogether too little understood or tolerated by a thoughtless public.



There is a great deal about disease that still remains wholly unrevealed even to doctors themselves. Moreover, very, very much of that which is known and understood by doctors still stands a fathomless mystery to laymen everywhere. There is nothing touching the lives of people so utterly beyond their own ken, nothing of such great interest to them concerning which they are and must remain profoundly uninformed. In the very nature of things people continue hopelessly and completely at the mercy of their physician. What an opening for the pretender! What an invitation to the over-ambitious! What an opportunity for the quack!

It was simply inevitable that physicians, in sheer protection of suffering humanity, should surround the practice of medicine with rules of conduct that would make charlatanism impossible, that would force all who would serve the sick to do so in fact "... for the benefit of my patients." Do not advertise. Do not make unwarranted claims. Do not use secret drugs or remedies. Do not promise great cures. In short, do not solicit patients by any means whatever, else good salesmanship rather than good doctoring would be the measure of success, and care of the sick would fall, not into the hands of physicians really trained and qualified but into the hands of the incompetent and the unfit.

This temptation to take advantage of the helplessness of humans in distress has been a continuing problem of medicine for all time. It has not been especially involved, however, and reasonable control has been possible through the persistent enforcement of these more simple ethical restrictions. But now another problem, new and not so simple, has appeared to plague the profession. With standardization and mass production the fetish of the day, some of our more social-minded have succeeded in getting under way various catchy schemes of mass medical care—schemes that never even would have gained a hearing if the complicated problem of caring for the sick were better understood by people everywhere.

For the profession to live up to the great responsibility that its peculiar position imposes, it has had to redefine some of its age-old doctrines in terms of these novel experiments. Nor can it fail, unless a heedless public interferes, to hold its members to strict accountability for their conduct while serving under these newer schemes. Just as it was necessary to forbid advertising and solicitation of patients in order to keep the over-ambitious and the quack

from preying upon an unsuspecting public, so has it become necessary now to forbid doctors taking part in any organized system of sickness care that includes features which threaten seriously the quality of medical service that is to be given. Do not be a party to any scheme that robs the sick man of his right to choose his own doctor. Do not serve under any system that puts other interests above those of the sick man himself. Do not contract to work under conditions that make it impossible to render adequate service to the sick, not too long hours or too many patients to permit good care. Finally and perhaps greatest of all because it encompasses them all, do not circumvent any of the rules of the game through the subterfuge of some intervening authority. For a group to offer to render services that are beyond the capabilities of anyone within the group is infinitely more serious—not less—than for an individual physician to make unwarranted claims as to his abilities. For a clinic to prey upon the public by some subtle form of solicitation is vastly more dangerous—not less—than for a doctor practicing alone to advertise.

It should be made clear in this connection that doctors hold no prejudice whatever against the use of the insurance principle as an economic expedient in easing the financial strain that so often comes with illness. The American Medical Association has taken a clear position in favor of insurance as protection against the catastrophe of wage loss during sickness. Throughout the land the profession has been an active force in the establishment of the many Group Hospital Service Plans. And here in the District of Columbia one finds the local profession well along on a sane and carefully planned program making it quite convenient for those of limited means to provide in advance for the best possible care when they are sick. Doctors stand adamant against government-controlled health insurance not because it is health insurance but because it is government controlled.

And it might not be impertinent to add in closing that the medical profession, unhampered by government and following its own dictates, has done a remarkably good job over the years in sensing how best to plan for the care of suffering humanity. Despite the many surveys that are being so widely publicized and the multitude of radical changes that are urged so freely, it still remains a cold and unpalatable fact that here in free America the state of the public health has reached an all-time high; that



the sickness care now available to and availed of by the rich, the poor and the rest of us is better by far than anyone, anywhere, ever before has had; and that in proof of all of this, if proof be needed, the latest official report of the United States Public Health Service, given out here in Washington by the Surgeon General himself, clearly demonstrates that there is less sickness, less suffering and less death among Americans today than ever before prevailed among the peoples of this or any other nation on the face of the globe. And all because the physicians of these United States, practically alone among the nations of the world, still stand concerted in their group determination in the words of the Oath to "follow the system of régime which, according to my ability and judgment, I consider for the benefit of my patients . . ." Pity the day when they are denied that noble privilege.

### ELECTION OF OFFICERS

Officers and Committee Members were elected at the Annual Business Meeting May 3, 1939, for terms as indicated:

*To serve from July 1, 1939, to June 30, 1940:*

John Hugh Lyons, *President*  
Daniel L. Borden, *President-elect*  
John J. Shugrue, *First Vice President*  
Coursen B. Conklin, *Second Vice President*

*To serve from July 1, 1939, on the Executive Board:*

William J. Mallory (4-year term)

*To serve from July 1, 1939, on the Board of Censors:*

William B. Marbury (3-year term)  
Jerome F. Crowley (2-year term)  
Walter Freeman (1-year term)

*To serve from July 1, 1939, to June 30, 1941:*

Henry C. Macatee, *Delegate to American Medical Association*  
Arthur C. Christie, *Alternate Delegate to American Medical Association*

### MEMBERSHIP

The following were duly elected to membership at the business meeting April 5, 1939:

#### *Active Member*

George Tarplit Sharp, Jr., 2231 Bancroft Place, N.W.

#### *Associate Members*

Francis I. Bloise, Doniphan Bldg., Alexandria, Va.  
Anna Regina Coyne, Saint Elizabeths Hospital  
Melvin Price Isaminger, 4620 Forty-third Street, N.W.  
Albert J. Sullivan, Gallinger Municipal Hospital

The following applicants presented for membership April 5 will be voted on at the business meeting October 4, 1939:

#### *For Active Membership*

Percy Ausphera Bryant, Emory, Atlanta, Ga.—1929  
Hayden Kirby-Smith, George Washington University—1937  
John Edward Lind, George Washington University—1909  
Alan Truxton Morgan, Columbia University—1930  
John Thomas Schnebly, University of Kansas—1935

#### *For Associate Membership*

Alfred Abramson, Medical College of Virginia—1934  
John George Ball, University of Buffalo—1936  
Henry Louis Bastien, Georgetown University—1932  
Riley Henry Guthrie, University of Tennessee—1921  
John Cameron McCluer, University of Virginia—1932  
John Edward Payne, University of Maryland—1922  
Fred O. Tonney, Loyola University—1909

The following were duly elected to membership at the business meeting May 3, 1939:

#### *Active Members*

Harold V. Connerty, Georgetown University School of Medicine  
Eugene de Savitsch, 1150 Connecticut Ave., N.W.  
Frank B. C. Geibel, 1835 Eye Street, N.W.  
Lewis Arthur Klein, 1463 Rhode Island Ave., N.W.  
Edward A. Krause, 1746 K Street, N.W.  
George P. Lemeschewsky, 2020 Shepherd Street, N.E.  
William Fleet Luckett, 1419 Rhode Island Ave., N.W.  
Henry T. Miller, 1801 Eye Street, N.W.

#### *Associate Members*

Meta Frances Haldeman, 1611 Thirty-first Street, N.W.  
Robert B. Hightower, 203 District Building  
Bradley D. Hodgkins, 4600 Chevy Chase Blvd., Chevy Chase, Md.  
John Hobart Judson, 2222 North Glebe Road, Arlington, Va.  
F. Bernard Schultz, 118 East Broad St., Falls Church, Va.  
Harriet E. Twombly, Saint Elizabeths Hospital

The following applicants presented for membership May 3 will be voted on at the business meeting October 4, 1939:

#### *For Active Membership*

Charles Seymour Coakley, George Washington University—1937  
Horace Hatch Custis, Jr., Hahnemann Medical College—1937  
Cecile L. Fufeld, George Washington University—1935  
Leon Seley, University of Minnesota—1938

#### *For Associate Membership*

Robert Ammiel Hare, College of Medical Evangelists, Loma Linda, Calif.—1925  
William Meyer, Medical College of Virginia—1918  
Ralph Lancaster Morrison, George Washington University—1919

Recent changes in membership status:

*Active to Associate*

Zigmond M. Lebensohn

*Reinstated to Associate Membership upon payment of dues*

Knud Knud-Hansen

*Resigned  
Active Members*

Robert Walter Frischkorn

Frank J. Shaffer, Jr.

*Associate Member*

George B. Fadeley

## NEWS AND PERSONALS

**The American Congress on Obstetrics and Gynecology**, sponsored by the American Committee on Maternal Welfare, will be held in Cleveland, Ohio, September 11-15, 1939. The Board of the American Committee on Maternal Welfare is composed of representatives from 21 member organizations, including the following:

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons  
 American College of Surgeons  
 American Gynecological Society  
 American Hospital Association  
 American Nurses Association  
 American Protestant Hospital Association  
 American Medical Association, Section on Obstetrics and Gynecology  
 American Public Health Association  
 Catholic Hospital Association  
 Central Association of Obstetricians and Gynecologists  
 Chicago Maternity Center  
 League of Nursing Education  
 Maternity Center Association of New York  
 National Medical Association  
 National Organization for Public Health Nursing  
 New England Obstetrical and Gynecological Society  
 Pacific Coast Society of Obstetrics and Gynecology  
 Southern Medical Association  
 United States Bureau of the Census  
 United States Children's Bureau  
 United States Public Health Service

Round table discussions for each professional group will be held in the mornings. The program will include such subjects as pregnancy associated with thyroid disease, heart disease, diabetes, tuberculosis, nutritional factors, carcinoma of the female genitive tract and abortions. The afternoon meetings will have papers of general interest to all members attending the Congress. The public will be invited to the evening sessions when there

will be speakers of national prominence. The Congress is not planned as a meeting for specialists in any sense of the word but for all physicians who are interested in the problem of maternal and child welfare. The Committee considers this Congress as comparable to a week of intensive post-graduate work.

The membership fee of \$5.00 includes membership in the American Committee on Maternal Welfare and registration for the American Congress on Obstetrics and Gynecology. Application blanks and further information may be secured from the Chairman of the State Membership Committee, Dr. J. Bay Jacobs, or from the American Congress on Obstetrics and Gynecology, 650 Rush Street, Chicago, Illinois.

Members of the local committee are:

Dr. J. Bay Jacobs, *Chairman*; Drs. George C. Ruhland, Ella Oppenheimer, Richard L. Silvester, L. Lee Cockerille, W. W. Boyd, and Bernard Notes.

Among the speakers at the Congress are the following members of the Medical Society: Drs. J. Bay Jacobs, Howard F. Kane, and Ethel C. Dunham.

**The Fourth Annual Assembly of the International College of Surgeons** will be held at the Hotel Roosevelt, New York City, May 21-25, 1939. More than 1200 representatives of thirty nations are expected to attend. The International College of Surgeons was founded at Geneva in 1935 with its object, as stated in its charter, "to gather together eminent surgeons of each Nation, Free State, and Dominion in the World into one great organization, with the thought that the personal exchange of views of surgical leaders will do much to advance the science of surgery and also promote a better understanding between those who in every country are working for the good of humanity." Among the speakers will be Dr. J. R. Goodall of Montreal, Canada; Professor P. L. Mirizzi of Argentina; Dr. A. J. Riviere of Paris; and Surgeon General Stanislaw Rouppert of Warsaw, Poland.

**The National Gastroenterological Association** has announced the program for its Fourth Annual Convention, convening in New York City. The scientific sessions will be held in Squibb Hall, 745 Fifth Avenue, June 1 and 2, 1939. Previous to these meetings, a social hour and reception has been

planned for Wednesday evening, May 31, in the Professional Building of the New York World's Fair.

**The Forty-fourth Annual Convention of the American Academy of Ophthalmology and Otolaryngology** will convene in Chicago, October 8-13, 1939, at the Palmer House. About half the program will be devoted to formal addresses and half to instructional courses.

**The Society for Investigative Dermatology, Inc.,** held its Second Annual Meeting at the De Soto Hotel, St. Louis, Missouri, May 16, 1939.

**The Twelfth Graduate Fortnight of The New York Academy of Medicine** will be held from October 23 to November 3, 1939, using for its subject, "The Endocrine Glands and Their Disorders."

The purpose of the Fortnight is to make a complete study and authoritative presentation of a subject of outstanding importance in the practice of medicine and surgery. A carefully integrated program will be provided to include clinics and clinical demonstrations at many of the hospitals of New York City, evening addresses by recognized authorities in their special fields drawn from leading medical centers of the United States, and comprehensive exhibits, including books and roentgenographs; pathologic and research material; and clinical and laboratory diagnostic and therapeutic methods.

The New York Academy of Medicine provides this program for the fundamental purpose of medical education. Consequently, all members of the medical profession are eligible for registration. A complete program and registration blank may be secured by addressing Dr. Mahlon Ashford, The New York Academy of Medicine, 2 East 103rd St., New York, N. Y.

**The Second Annual Meeting of the Medical Society of St. Elizabeths Hospital** was held in Washington, April 14. At the scientific session papers were contributed by the following: Drs. James M. Cunningham of Hartford, Conn., Bruce B. Robinson of Newark, N. J., Nolan D. C. Lewis of New York City, and Walter Freeman, Ernest E. Hadley, Harry S. Sullivan and Winifred Richmond of Washington. At the annual dinner which concluded the program Dr. C. Macfie Campbell, Director of the Boston Psychopathic Hospital, gave the address.

**The Washington Gynecological Society** elected the following officers at its meeting May 4:

Dr. Herbert P. Ramsey, *President*; Dr. Richard L. Silvester, *First Vice President*; Dr. William J. Stanton, *Second Vice President*; Dr. James R. Costello, *Secretary*; Dr. John W. Warner, *Historian*.

An informal meeting will be held on May 25 at the Manor Country Club, at which time the Society will be host to the Baltimore Obstetrical Society. An afternoon of golf will be followed by a dinner meeting, when Dr. Jennings Litzenberg of Minneapolis will address the group.

**The Washington Medical and Surgical Society** held its annual banquet at the Mayflower Hotel on May 6. Dr. Howard Francis Kane, Professor of Obstetrics and Gynecology at George Washington University, was awarded the Frank E. Gibson Annual Award of certificate and purse for "meritorious contributions to medical science."

The following officers for the coming year were elected at the meeting April 24:

Dr. Beveridge Miller, *President*; Dr. H. J. Russell McNitt, *Vice President*; Dr. Thomas C. Thompson, *Secretary*; Dr. Frank E. Gibson, *Treasurer*.

**The Washington, D. C., Ophthalmological Society** met April 10 in the Medical Society's building. Three nationally known ophthalmologists who had been secured for the George Washington Post-graduate Ophthalmological Course presented papers, Dr. W. L. Benedict of the Mayo Clinic, Dr. Walter B. Lancaster of Boston, and Dr. John Green of St. Louis.

For the **Cancer Control Campaign** conducted during April by the Women's Field Army of the District of Columbia, the Committee on Public Relations through its Speakers Bureau provided the following groups with speakers:

- April 4 American Federation of Labor  
James A. Gannon
- April 5 American Legion, Nash Unit  
Garnet W. Ault
- April 5 The Oldest Inhabitants  
Robert A. Keilty
- April 10 Pro Bonata Club  
J. Keith Cromer
- April 11 Women's Christian Temperance Union  
Truman Abbe
- April 11 Takoma Park Junior Women's Club  
F. A. J. Geier



- April 15 Federation of Citizens Association  
Joseph Horgan
- April 18 Excelsior Literary Club  
Edwin A. Merritt
- April 19 Women's Christian Temperance Union  
Harry H. Kerr
- April 22 Public Health Nurses  
Arthur H. Estabrook
- April 25 Lutheran Church of Atonement Group  
Stafford W. Hawken
- April 27 Fort Davis Citizens Association  
George Tolstoi
- April 27 D. C. Society of Medical Technologists  
Eugene R. Whitmore
- April 28 Loyal Knights of the Round Table  
Ralph R. Rathbone
- May 1 Dupont Circle Citizens Association  
Eugene R. Whitmore
- May 1 Forest Hills Citizens Association  
Joseph Horgan
- May 1 Silver Springs Women's Field Army  
Edgar W. Davis
- May 1 Metropolis View Citizens Association  
William B. Marbury
- May 5 Randle Highland Citizens Association  
Allan E. Lee
- May 5 Chillum Heights Citizens Association  
Robert J. Coffey

The Cancer Control Campaign was concluded on April 30. However, a number of speakers were placed after that date as it is contemplated that the educational program in connection with cancer will be made permanent.

A discussion of the **Wagner Health Bill** was presented on Sunday evening, May 7, in connection with the American Forum of the Air over the Mutual Broadcasting System. Those appearing on behalf of the bill were Senator Robert F. Wagner of New York, Dr. Martha Eliot, Assistant Director of the Children's Bureau, and Dr. William J. Kerr, Professor of Medicine, University of California.

Opposing views were expressed by Congressman Frederick C. Smith of Ohio, who is also a physician, Dr. Francis X. McGovern, Chairman of the Executive Board of the Medical Society, and George Morris, correspondent of *Commercial Appeal*.

The broadcast originated in the auditorium of the Department of Interior.

The **Woman's Auxiliary to the Medical Society** held their Annual Spring Luncheon and bridge at the Washington Golf and Country Club on April 26.

The wives of visiting physicians who were attending the Annual Scientific Assembly were guests of the Auxiliary.

The Auxiliary met for its annual business meeting at the Society's building May 3. The following officers were elected for the coming year:

Mrs. Robert M. Bolton, *President*; Mrs. William Earl Clark, *First Vice President*; Mrs. A. Clagett Gray, *Second Vice President*; Mrs. Frank J. Eichenlaub, *Corresponding Secretary*; Mrs. Edward M. Pickford, *Recording Secretary*; Mrs. A. Magruder MacDonald, *Treasurer*; Mrs. Gilbert B. Rude, *Historian*.

A special **Committee to Investigate the Lunacy Law** of the District of Columbia has been appointed by President Mallory in accord with the action of the Society at its business meeting April 5. The personnel of the Committee is as follows:

Dr. Charles R. L. Halley, *Chairman*; Drs. E. Hiram Reede, Joseph LeRoy Gilbert, Ernest E. Hadley, Loren B. T. Johnson, and Winfred Overholser, *Advisory*.

The **Washington Society for the Hard of Hearing** is conducting a free class in lip reading instruction for hard of hearing white children in the District and nearby Maryland and Virginia. This class is held at the Curtis Public School, 33rd and N Streets, N.W., every Saturday morning at 10 o'clock and is taught by a normal graduate of lip reading. Miss Elizabeth Brand, Executive Secretary of the Society, is glad to be of assistance in any problem relating to hard of hearing clients.

**Dr. Walter A. Bloedorn**, Professor of Medicine at George Washington University School of Medicine, has been appointed Dean of George Washington University School of Medicine. A member of the medical faculty since 1926, Dr. Bloedorn has been serving as Acting Dean since the death of Dr. Earl B. McKinley last year. Dr. Bloedorn has been Assistant Dean since 1930 and Medical Director of the University Hospital since 1932. He will resign his post as Chief of Staff of Gallinger Hospital to devote his entire time to his new position.

Dr. Bloedorn is an alumnus of George Washington University, where he received the degrees of Bachelor of Arts and Master of Arts. He received his medical degree from Creighton University.

**Dr. James A. Cahill, Jr.**, presented a paper on "Trauma of the Abdomen and Chest" before the

Queensboro Surgical Society at Long Island, New York, April 19. Dr. Cahill was elected an honorary member of the Queensboro Surgical Society following his address.

Dr. Walter W. Boyd has been appointed representative of The Medical Society of the District of Columbia to the Technical Committee of the Building Congress Code Committee. The purpose of the Building Congress is to establish "a technical committee of specialized groups to consider the various District Codes and to make constructive suggestions to the Commissioner for their improvement."

Dr. Wallace M. Yater addressed the Allegheny County Medical Society in Pittsburgh May 2 on the subject, "Heart Diseases Amenable to Surgery." There were 1200 physicians in the audience. Other speakers on the program were Dr. Paul A. O'Leary of the Mayo Clinic, Dr. Walter Dandy of Johns Hopkins University and Hospital, Dr. Fred Albee of New York City and Dr. Morris Fishbein, Editor of the *Journal of the American Medical Association*.

Dr. G. Lewis Weller, Jr., addressed the regular monthly meeting of the Washington Branch of the American Pharmaceutical Association on April 17. The subject of his talk was "The Cure of Anemia and Its Relation to the Pharmacist."

Dr. Hugh Hudson Hussey, Jr., and Dr. Roger M. Choisser have been appointed Associate Editors of the Medical Annals of the District of Columbia.

Dr. Norman P. Scala and Dr. Ernest A. Spiegel (Philadelphia) presented a paper jointly at the meeting of the Philadelphia Neurological Society February 24, the subject being "The Interference Phenomena between Optokinetic and Labrynthine Nystagmus."

Dr. Winfred Overholser, Superintendent of Saint Elizabeths Hospital and former Commissioner of the Department of Mental Diseases of Massachusetts, was made an honorary member of the Massachusetts Psychiatric Society at its meeting March 24, 1939, "in recognition of his many years of work for the advancement of psychiatry in this Commonwealth."

## BOOKS RECEIVED

Acknowledgment is made of the following books which have recently been received:

**Doctors, I Salute!** Emilie Conklin. Winona Lake, Indiana, Light and Life Press, 1938. 92 pp.

**Standard Bodyparts Adjustment Guide.** Insurance Statistical Service of North America, Chicago, Ill., 1939. Price \$8.00 with revision service.

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### Albert Livingston Stavelly, M.D. (1863-1939)

Dr. Albert Livingston Stavelly, retired gynecologist and surgeon, a Life Member of The Medical Society of the District of Columbia, died March 28, 1939, at his home in Lahaska, Pennsylvania, where he had been living since last fall. He was a former superintendent of Garfield Hospital.

Dr. Stavelly received his academic training at Princeton University and was graduated in medicine from the University of Pennsylvania in 1888. He held membership in the American Medical Association, the American College of Surgeons, the Clinico-Pathological Society, and the Metropolitan and Chevy Chase Clubs.

He was married to Willie Browning Haralson of Montgomery, Alabama, whose father was Justice Jonathan Haralson of the Alabama Supreme Court. She died a number of years ago. Dr. Stavelly is survived by two sisters of Lahaska, Pa.

### De Witt Clinton Chadwick, M.D. (1858-1939)

Dr. DeWitt Clinton Chadwick, a Life Member of The Medical Society of the District of Columbia, died April 21, 1939, at his home, 2026 O Street, N.W., following a brief illness.

Dr. Chadwick, a descendant of Robert Treat, a Colonial Governor of Connecticut, was born in Camden, Ohio, in 1858. In 1895 he received his degree in medicine from the old Columbian University, now George Washington University. During his many years of practice he had been associated with Garfield and Sibley Hospitals. He was a member of the American Medical Association, the Hope Lodge of Masons, and the Order of the Eastern Star.

Surviving are his widow, Mrs. Alice Chadwick, and daughter, Mrs. Mary Chisholm, of this city; two sons, Leigh E. Chadwick of Boston and Kelley R. Chadwick of Sewaren, N. J.; and two grandchildren.

**Charles L. Billard, M.D.**  
(1878-1939)

Dr. Charles L. Billard, well known ophthalmologist, an Active Member of The Medical Society of the District of Columbia, died May 1, 1939, in Garfield Hospital.

Dr. Billard, who lived at 3015 Ellicott Street, N.W., was a native of Washington, born in 1878. He received his degree in medicine from the University of Pennsylvania in 1904 and had practiced in Washington since 1906. He was a member of the staffs of the Episcopal Eye, Ear and Throat Hospital and Children's Hospital, and had formerly been a staff member at Providence and Gallinger Hospitals. At one time he was visiting ophthalmologist at Saint Elizabeths Hospital. He was instructor in clinical ophthalmology in the medical schools of both Georgetown and George Washington Universities. He was a fellow of the American Academy of Ophthalmology and a member of the American Medical Association, the Chevy Chase, University and Kiwanis Clubs, the Cathedral Masonic Lodge and Sigma Xi Fraternity.

Surviving are his widow, Mrs. Agnes Harvey Billard; a son, Charles Lawrence Billard, student at George Washington University; a daughter, Mrs. Frederick B. Lamm of Tokio, Japan, who is the wife of Donald W. Lamm, connected with the American Embassy; and two brothers, W. W. Billard of Baltimore and George C. Billard of Washington.

**Thomas Andrew Vogel, B.A., M.D.**  
(1894-1939)

Dr. Thomas Andrew Vogel, an Associate Member of The Medical Society of the District of Columbia, died April 1, 1939, at his home, 327 East State Street, Columbus, Ohio.

Dr. Vogel was born in Columbus, Ohio, October 25, 1894. He received his degree in medicine from Georgetown University in 1921 and practiced in the District for a short time. He was elected to Active Membership in the Society in 1922 but transferred his membership to Associate when he moved to Columbus.

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2. WADSWORTH, A.: *Am. J. Hyg.*, 1931, 14, 630.
3. BULLOCH, W.: *Medical Research Council*, London, 1929, 2, 291.
4. HERRICK, W. W.: *Arch. Int. Med.*, 1918, 21, 541.
5. HOYNE, A. L.: *J. A. M. A.*, 1936, 107, 478.

6. SCHWENKTER, F. F., GELMAN, S., AND LONG, P. H.: *J. A. M. A.*, 1937, 108, 1407.
7. BREWER, K. A., AND CAMPBELL, E. P.: *Mil. Surgeon*, 1938, 83, 50.
8. NORTON, J. F., AND GORDON, J. E.: *J. Prev. Med.*, 1930, 4, 339.
9. SMITHBURN, K. C., KEMPE, G. F., ZERFAS, L. G., AND GILMAN, L. H.: *J. A. M. A.*, 1930, 95, 776.
10. BRANHAM, S. E., AND ROSENTHAL, S. M.: *Pub. Health Rep.*, 1937, 52, 685.
11. BROWN, T. M.: *Bull. Johns Hopkins Hosp.*, 1937, 61, 272.
12. BANKS, H. S.: *Lancet*, 1938, 2, 7.
13. WILLIEN, L. J.: *J. A. M. A.*, 1938, 110, 630.
14. WAGHELSTEIN, J. M.: *J. A. M. A.*, 1938, 111, 2172.

(Continued from page 144)

3. HERMAN, C.: *Idiopathic Aplastic Anemia*. *Am. J. Dis. Child.*, 1922, 23, 484.
4. FONTAINE, B. W.: *Aplastic Anemia*, with Report of a Case; Differential Diagnosis of the Anemias Due to Hemolysis, and Due to Hemopoietic Degeneration. *South. M. J.*, 1923, 16, 495.
5. HAYHURST, E. R.: *Poisoning by Petroleum Distillates*. *Indust. Med.*, 1936, 5, 53.
6. KRACKE, R. R., AND PARKER, F.: *Etiology of Granulopenia (Agranulocytosis)*, with Particular Reference to Drugs Containing Benzene Ring. *J. Lab. & Clin. Med.*, 1934, 19, 799.

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cytes, nucleated red cells). The bony structure seemed to be much less compact than normally, suggesting the picture of delicate fibrous tissue. The brain and spinal cord were examined by Dr. Freeman. The brain was flattened, the caudate nucleus and the putamen showed 3 soft areas with fairly sharp granular edges (possibly infarcts). The spinal cord was exceptionally atrophic.

A case of pernicious anemia is presented, which ended in a fatal agranulocytosis. The agranulocytosis is believed to have been induced by increasingly heavy doses of a sedative compound containing aminopyrine and phanodorn.

#### BIBLIOGRAPHY

1. KRACKE, R. R., AND PARKER, F. P.: *Agranulocytosis Etiology*. *South. M. J.*, 1931, 28, 911.
2. FITZ-HUGH, T., JR.: *Sensitivity Reactions of Blood and Bone Marrow to Certain Drugs*. *J. A. M. A.*, 1938, 111, 1643.
3. EISLER, B.: *Zur Kausalgenese der Agranulocytose*. *Klin. Wchnschr.*, 1937, 16, 788.
4. KOPET, J. C., AND GOODRICH, F. J.: *Relation of Barbitol and Phenobarbital to Granulocytopenia*. *J. Am. Phar.*, 1937, 26, 483.
5. VON BAEYER, E.: *Zur Arzneimittel-Agranulocytose*. *Klin. Wchnschr.*, 1936, 15, 1914.



# MEDICAL ANNALS

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### AN ANALYSIS OF THE RECENT PROPRIETARY DRUG TRAGEDY DUE TO "ELIXIR OF SULFANILAMIDE"\*

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The poet-educator-physician, Dr. Oliver Wendell Holmes, about one hundred years ago, remarked: "I firmly believe that if the whole *materia medica*, as now used, could be sunk to the bottom of the sea, it would be all the better for mankind,—and all the worse for the fishes."<sup>1</sup> This remark was not a mere platitude in his time, and even today it is still pregnant with meaning, particularly if used in the qualified sense in which it was originally used. Dr. Holmes was prompted to make the remark by the uncritical attitude of physicians toward official drugs; today it is particularly applicable to the host of unofficial proprietary agents which are supplanting the official agents, thus leading not only to confusion but sometimes disaster.

Physicians today, familiar with the history of present-day medicine, recall the evils that have arisen from the multiplicity of preparations represented by the barbituric acid and local anesthetic groups. This knowledge makes them wonder whether we are not on the verge of a similar era with respect to sulfanilamide and its derivatives.

The recent "Elixir of Sulfanilamide" tragedy affords such a striking example of how a worth-

while agent may suddenly become dangerous when it becomes a proprietary that its story in brief is worth narrating, particularly because of the implications when its history is properly understood.

One of the outstanding disasters associated with the practice of medicine which is still vivid in the minds of both the physician and the layman is the recent wholly unnecessary poisoning of over a hundred sick patients by physicians themselves, who, acting in good faith, innocently prescribed a proprietary drug, a so-called improved form of the widely heralded therapeutic agent sulfanilamide, under the misleading name of "Elixir of Sulfanilamide."

The term "proprietary drug" is today almost universally defined as "any chemical, drug or similar preparation used in the treatment of disease, if such article is protected against free competition, as to name, product composition, or process of manufacture, by secrecy, patent or copyright, or by any other means."

First let us inquire whether this elixir is really a proprietary compound in the accepted sense of the term. The label on the bottle states that it is an "Elixir of Sulfanilamide"; that "each fluid ounce represents 40 grains of sulfanilamide." It carries a trade-mark. The uses and dosage are also given but no mention is made of

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\* Delivered on February 18, 1939, before the Seventh Annual Postgraduate Clinic of the George Washington University School of Medicine.

its chief toxic agent, diethylene glycol, which was used simply as a solvent.

The preparation is, therefore, essentially a semi-secret one, protected by trade-mark from free competition, and may correctly be termed a proprietary compound, or, in the terms of the layman, a "patent medicine."

Let us further inquire whether this notorious proprietary, "Elixir of Sulfanilamide," is really an elixir in the official sense of the term. According to our official book of therapeutic agents, the United States Pharmacopoeia, an elixir is composed essentially of water and alcohol, to which is added sugar and a volatile oil with which to impart a pleasing flavor. This "death elixir," however, was composed essentially of water and diethylene glycol, the latter being closely allied to one of our popular antifreeze fluids, and whose toxicity for man was at that time unknown. Flavoring and coloring agents were added simply to give it a pleasant taste and attractive appearance.

Up to this time sulfanilamide was given chiefly in tablet or capsule form on account of the drug's relative insolubility in water and alcohol. In June of 1937 sales agents of the S. E. Massengill Company of Bristol, Tennessee, reported to owner Massengill that the sick of the south like their "tonics" and medicines in liquid form, and near the end of July 1937, he accordingly set his chief chemist to work to find a suitable solvent for sulfanilamide, the result being this novel but poisonous compound, the so-called "Elixir of Sulfanilamide." This "elixir" was developed at breakneck speed, the first shipment of 40 gallons being placed upon the market on August 28, 1937, or about a month after his chief chemist began to think about the problem.

In spite of the fact that neither the solvent nor the compound had been given adequate clinical tests for toxicity, 240 gallons were manufactured and distributed up to October 15, 1937; this included 484 one-ounce physicians' samples and 187 two-ounce salesmen's samples.

It was fortunate for the sick that most of the drug was administered on prescriptions of physi-

cians, who promptly advised its discontinuance when reports of toxic effects were received.

To date the Food and Drug Division of the United States Department of Agriculture has authentic records of 107 deaths due to this "elixir," 100 of which were traceable to physicians' prescriptions.

The report by Dr. A. S. Calhoun, in an open letter to the *New Orleans States* of October 22, is typical of the feelings of the physicians involved. He wrote as follows: "Nobody but Almighty God and I can know what I have been through in these past few days. I have been familiar with death in the years since I received my M.D. from Tulane University in 1911. Any doctor who has practiced more than a quarter of a century has seen his share of death. But to realize that six human beings, all of them my patients and one of them my best friend, are dead because they took medicine that I prescribed for them innocently, and to realize that that medicine which I had used in such cases suddenly had become a deadly poison in its newest and most modern form; well, that realization has given me such days and nights of mental and spiritual agony as I did not believe a human being could undergo and survive."

Such is the background of our latest drug tragedy. Upon whom shall the responsibility for it be placed? Involved in it were, as I have indicated, a licensed pharmaceutical chemist; numerous licensed druggists; numerous licensed physicians, all of whom were acting in good faith, and lastly, but not the least involved, a number of high-powered salesmen interested primarily in breaking down sales resistance on the part of physicians and druggists.

The only one indicted and convicted for this tragedy was the owner and president of the drug firm who was responsible for placing the compound on the market. The chemist who was responsible for the formula severed his connection with the company about six months ago, and on January 17 of this year the newspapers reported that he was found shot to death in his home. His widow announced that the shooting was accidental; the police, however, inclined to

the possibility that he had committed suicide. There are those who hold that society itself is responsible since at that time there was no adequate legal control for preventing a drug manufacturer from distributing an untried drug which may possess undue poisonous properties.

This "elixir" tragedy possessed the elements of a major epidemic in focusing public attention to it, but it is no more tragic than many lesser previous drug tragedies in which physicians were involved, among them being dinitrophenol, cinchophen and similar compounds which have been placed in the hands of the physicians prematurely.

The pertinent question, therefore, is: How may physicians protect themselves from being the unwilling agent of a proprietary manufacturer? The answer to this question is exceedingly simple and should be apparent to all, namely, by not using unapproved proprietaries. But this course is rather difficult to pursue. There is probably no group that knows the limitations and peculiar side actions of drugs as well as the physicians themselves. This knowledge keeps them alert to embrace new remedies, all of which when proposed have a "clean slate," that is, their chief action is known, but their real therapeutic worth, their numerous limitations, and their side actions are still to a large degree unknown or obscure. Hence, such a potential user readily becomes credulous. It is this credulity on the part of the physician, together with the impact of the high-powered salesman, which is apt to make him the tool and often the victim of the proprietary manufacturer.

There are two publications which should serve as first lines of defense behind which the physician may protect himself from the onslaught of the proprietary evil, the first being the United States Pharmacopoeia, the second, the New and Non-Official Remedies. Both books are compiled by thoroughly qualified men who are as free from bias as can be found. They are not interested in the dividends that may arise from the sale of the drugs which they extol. Practically all serve without pay.

The United States Pharmacopoeia is a publication that is compiled by physicians, pharmacists and other scientists, and is designed primarily for the guidance of those in the professions of medicine and pharmacy. In it are listed the most useful and widely sanctioned drugs used in practicing the art of healing, together with directions for their preparation and standards for their purity and identification. It is revised every ten years and has already passed through eleven revisions. Provision has now been made for interim revisions which tend to keep the publication up to date. Drugs which are protected by secrecy or trade-mark are not admitted. It has been accepted as the standard book of reference by the government in its enforcement of the new Food, Drug and Cosmetic Act. Although pharmacists have aided in the compilation of the publication, the list of drugs which it contains is made up of those selected by the physicians of the committee of revision. It is a fact worthy of note that the proprietary manufacturers have unconsciously given their approval to this list, since almost all of the specialties that such manufacturers introduce are not new except in name only, the essential ingredient or ingredients being listed in the U. S. P.

The publication, New and Non-Official Remedies, is an authoritative treatise on proprietary drugs. It is compiled and issued annually in revised form by the Council on Pharmacy and Chemistry of the American Medical Association. The function of this Council is to protect, primarily through this publication, the medical profession and the public against fraud, undesirable secrecy, and objectionable advertising in connection with the sale and distribution of proprietary medicinal articles. It acts both in an investigative capacity and as a judicial body to pass upon the claims of manufacturers as well as to review the findings of consultants who have been set to work to investigate certain aspects of each article. In other words, proprietaries are given the "light of day," for here one may find essential information dealing with their chemical and physical nature, their mode of



action, toxicity and dangers, uses and side actions. If a certain proprietary has been investigated and approved, it is listed in the main section of the publication; if investigated and not approved, it is relegated to the yellow section, where pertinent references may be found that will disclose the evidence which the Council had used to pass judgment upon it. If one does not find a proprietary approved in this book, it is an indication that it is either in the experimental stage or not of sufficient value to be investigated. In addition to being revised annually, two supplements are issued yearly so that there is slight possibility that the physician will ever be deprived of a useful remedy by relying upon it.

"Elixir of Sulfanilamide" had not been submitted to, nor investigated by, the Council on Pharmacy and Chemistry until after the tragedy occurred. If it had been investigated it would have been found to have violated several of its most fundamental rules. However, at the time of the appearance of the elixir, four drug manufacturers had submitted their brands of sulfanilamide to the Council, all of which were approved. To date 14 brands have been accepted by the Council as satisfactory.

"What's in a name?" is an expression that is full of meaning for the proprietary manufacturer. It is the name which he protects through its registration under the trade-mark law, thus making it the sole property of the originator as long as he desires to renew its registration. The material which he uses in a preparation may be used by every producer unless he applies for and obtains a patent on the product. Proprietaries, however, are seldom patented. A real patented medicine is not surrounded by secrecy and mystery. Patent means open to all. To secure a patent one must disclose the formula and convince the officials of the Federal Government that there is something new and meritorious in the medicine. Proprietaries that are surrounded by secrecy and mystery are the so-called "patent medicines" that are made to sell chiefly to the layman. The vast majority could not be patented since there is nothing new or meritorious

in them. Perhaps the chief risk incurred by the physician through his use of even an ethical proprietary is the danger of not securing an authentic and uniform product. This arises from the fact that the composition of a specialty may be changed from time to time without the physician being informed; furthermore, a specialty manufacturer has no rigid requirements to meet, such as those set up for U. S. P. and N. N. R. drugs.

Specialties are promoted because the U. S. P. preparations are on a price competitive basis, thus making them less profitable merchandise than the specialty that is sold with a protected trade name. Discriminating physicians have found that by relying on Pharmacopoeial products they may often save the patient 400 per cent, in addition to securing a uniformly standard product.

A sequel to this tragedy was the passage on June 25, 1938, of the long discussed and much needed Food, Drug and Cosmetic Act, which now supersedes the old Food and Drug Act of 1906.

The new Act is an attempt to make it impossible for a tragedy of similar scope to occur today, at least not within the jurisdiction of the Act, that is, in interstate commerce. The Department of Agriculture is now a stronger line of defense against the unethical proprietary manufacturer, and its officials may be consulted at all times regarding the status of new and untried agents. Section 505 of the new Act concerns new drugs. It states, "No persons shall introduce or deliver for introduction into interstate commerce any new drug, unless an application filed pursuant to the following is effective with respect to such drug. A person shall submit to the Secretary as part of the application: (1) a full report of investigations which have been made to show whether or not such drug is safe for use; (2) a full list of the articles used as components of such drug; (3) a full statement of the composition of such drug; (4) a full description of the methods used in, and the facilities and controls used for, the manufacture, processing, and packing of such drug; (5) such samples of

such drug and of the articles used as components thereof as the Secretary may require; and (6) specimens of the labeling proposed to be used for such drug."

The term "interstate commerce" is very broadly defined and means: (1) commerce between any state or territory and any place outside thereof, and (2) commerce within the District of Columbia or within any other territory not organized with a legislative body. The Act, therefore, gives protection to the people of the District of Columbia but does not provide for those living in Maryland or Virginia, or in any other state. There is, however, a concerted movement on foot within the states to secure state legislation that will give the people of the several states as complete a protection against abuses within the state as does the new Federal law against the evil in interstate traffic. The states collectively have already drafted a model state act that is based on the Federal act, and it is hoped that it will soon become the law in each state in the Union. It should be the duty of every physician to do his utmost to secure the passage of such a law for his state so that he and his patients will be adequately protected against the evil of new untried proprietaries.

Lastly, this tragedy has brought up the question of whether proprietaries should be the subject of advertisement. A drug like sulfanilamide should need no advertisement; worthless drugs do if they are to be profitable commercially. As mentioned previously, there are now 14 brands of sulfanilamide that have been accepted

by the Council on Pharmacy and Chemistry of the American Medical Association. Each brand meets the rigid chemical requirements of this Council and is of standard purity. To make any one of these the subject of an intense advertising campaign seems unfair to the public, since no brand possesses advantages over the others. Sulfanilamide, of course, can not be patented because it is an old chemical, having been described by Gelmo in the chemical literature almost thirty years ago, but it can be given a distinctive trade name by which it can be sold as a so-called "superior remedy" at an exorbitant price.

Dr. Arthur J. Cramp, former Chief of the Bureau of Investigation, the American Medical Association, speaking on this point before the Associated Advertising Clubs of the World, said:

"Are there any patent medicines that should be advertised? My own answer to the question is that I do not know of any. The very conditions under which patent medicines are sold make such sales inimical to the public health. So long as proprietaryship and secrecy of composition are the controlling factors in the industry, there is too great an incentive to fraudulent and misleading claims. So long as modern advertising methods call for creating demands instead of merely filling them, the patent medicine business will continue to be a vast industry."

#### BIBLIOGRAPHY

1. HOLMES, O. W.: "Currents and Counter-currents" from Medical Essays. Boston, Houghton Mifflin, 1883.

**The Mind of Man and His Security.** Today the American people stand before the world as a nation of free men where the processes of individual initiative, freedom of thought, controlled research and independent character have placed us in the very forefront of all the peoples in the world in science, in health, in our scale of living, in recreation and in the ability to enjoy life. It is true, as some of our statesmen have said, that not all the people are possessed of all these advantages, yet taken as a whole the statement is true of the vast majority of our people. By the same forces which have brought us to this high place we should be able to overcome the deficiencies of those who have not yet realized these great advantages and to give to them much of that which is enjoyed by the majority. To this purpose the American medical profession has repeatedly dedicated itself. The solutions of the problems of the nations so far as they concern medical care are the responsibility of the medical profession. That is a responsibility which a free medical profession has never avoided and

to which it is at this very time giving its most serious consideration. The responsibility for restoring to this nation an economic status in which more and more independent citizens will be able through their own employment and through the returns coming from that employment to supply themselves with the necessities of life is a responsibility which must rest on the leaders of the nation in industry, in finance and in government. With these leaders also American medicine is ready and willing to cooperate in doing all that can be done to spread more widely the benefits of American life and living.

As President of the American Medical Association for the coming year it is to this task primarily that I propose to devote myself.

*Extract from address of PRESIDENT ROCK SLEYSER before the American Medical Association's Ninetieth Annual Session, St. Louis, May 16, 1939. Journal, American Medical Association, May 20, 1939, p. 2006.*



## PSYCHIATRIC ASPECTS OF DRUG ADDICTION\*

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In dealing with the psychiatric aspects of drug addiction, we encounter the seeming paradox of a person submitting himself for treatment and then doing everything that he can to avoid it.

Anyone who has attempted the office treatment of such patients can draw on memory to recall individuals who announce their desire to break off the habit, swear to their willingness to cooperate in every way, and once treatment is instituted use every subterfuge at their command to oppose the measures indicated. This paradox in the attitude of the addict creates a comparable paradox in the attitude of the physician. Physicians like to feel that they have the full cooperation of the patient and are likely to resent the patient who professes one thing and does another. They do not like to have their orders flouted and their efforts combated. They resent the slyness, stealth and unreliability and are angered by the trickiness and deceit which they meet. As a result, what should be an objective attitude toward a problem tends to become a personal struggle between patient and physician to see which can best the other. As this occurs we find the physician neglecting the fact that there are reasons for the patient's behavior and coming more and more to criticize and condemn it. Eventually, he arrives at the doctrine that the addict is a worthless degenerate, unworthy of help, and one who should be locked up somewhere.

If the physician bears in mind that this unreliability is a characteristic of the personality structure of the patient and that as such it will be manifested in the present treatment, it is more likely to be treated as a symptom. In other words, the patient's attitude itself requires understanding, and by pointing out what the patient is doing he may be led to seek the explanation himself. If brought to attention as

a question for discussion and not as a reprimand, it focuses interest on the problem of what can account for this seeming contradiction in purpose. Since addiction is a symptom of an underlying disorder of personality we would expect it to show the characteristics of other psychopathologic symptoms. That is, we would expect to find addiction a compromise, a substitute, a defense, a devious method of obtaining an end of value to the patient. Because the use of the drug is of value to the patient and is a method of dealing with difficulties which lessens their poignancy, he does not readily give it up until something more satisfactory can be found to take its place. The task of discovering real possibilities of satisfaction, together with the inconsistencies of the patient's attitude, make the successful treatment of the individual addict so difficult in private practice.

What has the physician to offer in the way of actual relief? What can he hope to do about the underlying neurosis or perhaps psychosis from which the patient protects himself by the use of a narcotic or alcohol?

As the character of the individual is studied we do not find a single etiologic factor which we may circumscribe sharply and say, "This is the cause of drug addiction." Instead, we find that addiction is a unique means of evasion rather than a solution of many different types of problems, that it serves as an escape from varied conflicts, no one of which is as yet entitled to be regarded as specific.

Thus, one man was introduced to drugs by a surgeon who operated on his jaw many times for a recurrent infection of the mandible. This followed a tooth extraction and a fixation of the joint which prevented the mouth from opening wider than the diameter of a drinking tube. The man lived in almost constant fear of an abscessed tooth and worried incessantly about how it could be treated or removed if it occurred. After three years of repeated operations, a con-

\* Read before the Society, January 11, 1939, as part of a Symposium on Narcotic Addiction.



sultant diagnosed a fungus growth, treated it with iodide, and in three weeks recovery ensued. Nevertheless, three years of habituation to dilaudid had its effects. Try as he might he could not quit entirely even though the pain was no longer present. He would take a  $\frac{1}{16}$  grain of dilaudid, dissolve it in 10 c.c. of water and take 1 c.c. of this homeopathic dilution two or three times a day. He could not understand why, when the dosage was diminished practically to this vanishing point, he still needed that last fraction. Actually, he was no longer addicted to a drug, because  $\frac{1}{16}$  grain of dilaudid cannot be regarded as having any effect. However, he was compulsively bound by the idea of addiction, that is, psychologically though not physiologically addicted. Further data revealed a marital situation which though calm and serene on the surface was but a drab and colorless housekeeping arrangement. Addiction kept him comfortable and complacently unaware of the actual relationship. He and his wife rarely went out together or had friends in for an evening. Books took the place of conversation and he read himself to sleep seven nights a week. A growing son of 11 years of age was placed in school so that the even tenor of the patient's way might go undisturbed.

Why he came for treatment is somewhat obscure, but it seemed to be because he felt addiction was a stigma of some sort and he did not wish his son to learn of it. His work was not interfered with by it nor was he suffering any physiologic distress. After successful treatment and removal of the drug he became more irritable and more aware of a quick temper, but when pressed for a more detailed account of his daily life he departed from further psychiatric investigation of his personality.

In another instance, a woman of 40 was admitted for paregoric addiction. She married when 16 to get away from the domination of her mother. Divorce followed in two years. A second marriage was more successful until the husband became alcoholic and lost several excellent positions. Her father then had to support them both. Mild sedatives were taken

to secure sleep; if she lay awake she thought only of the failure of her marriages. Her disinclination to return to her mother's home made another divorce unattractive, and she had no means of supporting herself. Increasing sedation led to paregoric addiction. She came for treatment only because forced to by her parents, her husband being in another institution for alcoholism. When deprived of the drug she said her body became more alive and sensitive. She was notably irascible and jumped at noises the average person would fail to notice. Paregoric deadened all this for her.

As one would expect, treatment was quite ineffective in this case. The addiction was the only means she had found of making life less miserable for her and she had no intention of giving it up although she repeated many times that a cure was what she wanted. Although she readily admitted her desperate unhappiness, she balked at intensive psychotherapy which might have ameliorated some of her difficulties. She left essentially unimproved.

These are a few of the more superficial aspects of the problems encountered in the lives of the drug addict. If the patient is willing to talk of himself at all, one finds he has exceptionally strong feelings about his family, particularly his parents, is excessively attached to the parent of the opposite sex and cordially dislikes the parent of the same sex. But this is not different from the alcoholic or others with personality difficulties, since practically all show the same failure to identify themselves successfully with the parent of the same sex.

From studies of neurotics and psychotics, who are far more communicative than drug addicts, we have learned that their difficulties are traceable to early infantile and childhood experiences that caused them to feel insecurity and lack of confidence in themselves and in other people.

In our studies of very young children, we have learned to observe that, when they are acquiescent on the surface and sly and stubborn underneath, there is something wrong in the way they are being handled. Such a small child can be very exasperating and try our patience to an

extreme. The constant, bitter animosity of drug addicts in a state of deprivation and their suave, flawless detachment when a supply of the drug is available, both are an indication of faulty upbringing as children. Suspicion lurks back of both groups.

The drug addict, however, when he has access to supplies, allows himself no outlet for his animosity. Whereas whiskey permits the alcoholic a lessening of the embargo on the expression of hostility, the taking of drugs pushes farther out of consciousness anger and destructive wishes.

Also, the alcoholic when drinking feels less inner opposition to the frank expression of affection. The satisfying sensations and phantasies from drugs on the other hand are more solitary, more narcissistic, and serve to keep the individual estranged from other people. Since his suspicion of any frank, open contact with anyone is so deeply rooted, it is difficult to make friends with him. Since life has given these people such major hurts, and since their drug-engendered phantasies are so far beyond actual satisfactions, it is hard to interest them in undergoing the painful process of adjustment to realities.

Hostile feelings play a large role in both alcohol and narcotic addiction. The alcoholic whom the wife describes as the "nicest person in the world" when sober can only vent his anger when the customary inhibition is released. After the explosion is over wishful thinking comes into play. Neither wife nor husband wants to believe the anger is genuine and both unite in denying the truth of "*In vino veritas.*" Thus we have the fiction maintained that the alcoholic is a matrimonially well adjusted person. Despite the number of divorces due to alcoholism there would inevitably be more if it were not for the safety valve that liquor supplies for the pent-up resentment.

In the case of morphine, one former user spoke of it as follows: "It served as a chemical straight-jacket dulling the ethical and moral sense; a sublimation achieved by drugs, pleasing to the individual and making me

at the same time by rationalization acceptable to society. It dulls and makes us less aware of thoughts and desires offensive to our conscience. There is hatred of those who deprive us of it, concealment of plans to obtain it as soon as released, revenge for the cruel taunting of nurses and doctors, of being held up to ridicule, for the humiliation of treatment with no attempt made to get at the basic fundamentals." This individual succeeded through treatment in being cured of addiction and has gotten along without it for over 12 years, this in spite of an intercurrent surgical operation and one instance in which morphine was unwittingly administered by a physician who knew nothing of the patient's previous history.

The motive of revenge is clearly seen in the following case. The only son of a widowed mother was a model boy, fulfilling his mother's every wish until he was 16. At this time his mother married again. On the morning of the day set for the wedding he demanded of her, "Mother, are you going to sleep with that man in this house tonight? If you are, I'm going," and he did. There was an immediate change of personality. Whereas, before he had gone with what his mother termed a "nice" crowd of young people, he now sought the company of an undesirable gang of hoodlums. Soon he was bootlegging liquor and drugs and using both himself. He did not return home to live, and only when under the influence of morphine did he show his mother any consideration.

Another use for a narcotic was found by a Southern gentleman of anti-bellum tradition. He utilized morphine to maintain serenity in the face of the world. He was a respected and loved member of the legal fraternity, with great pride of family. His wife had had a lover for years, a man who frequently stayed in the home. Although there may have been discreet gossip, there was no publicity, no scandal. This was in accord with his ideal of the way a gentleman should behave, and the drug kept him from facing his own terrific hurt and anger. After the death of the lover the man cured himself of the addiction. A short time later, he died of cancer.



A daughter, aware of the above while it was going on, became a chronic alcoholic for several years until treatment effected considerable improvement.

Another married man, of good professional standing, was given morphine for relief from a painful fracture. He continued taking it for sleeplessness. He soon found it had a hold on him that diminished the value of his work. He turned to the church, became very devout, and succeeded in relieving the hold which the drug had obtained over him. His work was no longer impaired, but whereas he had been a genial, kindly person in the home, he was now excessively strict, morose, and faultfinding. The so-called cures, through religion, will power, or what not, unaccompanied by some release of the inner difficulties, are very apt to be associated with personality changes of an undesirable nature.

Some patients, a good many I believe, are introduced to the milder sedatives such as the barbiturates by the physician who prescribes for sleeplessness and nervousness of undetermined origin. One such patient consulted her doctor for precordial and abdominal pain and choking sensations in her throat. Repeated examinations including competent consultations failed to reveal any organic basis. She insisted she had no problems. Sedatives in increasing amounts were prescribed for her nervousness over a period of a year and a half. She saw a psychiatrist once but refused to return to him. Finally, she was induced to see one with psychoanalytic training and in two interviews revealed that for several years she had been having

numerous affairs with men, which, in view of her very strict early religious upbringing, were causing marked feelings of sin and guilt which produced anxiety and sleeplessness and the conversion symptoms. She said she just couldn't tell her own physician since he was her friend—a curious but revealing commentary. This case illustrates the danger of prescribing sedatives for sleeplessness or nervousness of undetermined origin if no serious attempt is being made to discover the source of these symptoms. To put it bluntly, don't do it if you don't know what you are doing it for. These patients who use the milder sedatives to excess can be treated in office practice if the physician has understanding of the present-day concepts of psychopathology. Morphine addicts usually require hospitalization.

To summarize and conclude, it can be seen from each of the cases cited that drug addiction serves a useful purpose, viz., to deny a fact and substitute a fiction for it. It is equally apparent, however, that there is no specific set of circumstances, social, psychologic or somatic, which serves to deviate the individual from the normal or toward drug addiction. There is need for more research into the character of the patterns of the individual addict, out of which investigation may come an acceptable theory of drug addiction.

To repeat, there is a psychopathology of the individual addict but not of drug addiction.

The problem ceases to be a hopeless one if attention is centered on the individual and there is realization that exasperating behavior is a symptom and not just plain "cussedness."

**Your Chest Should Be Flat**, says S. A. Weisman, in a little book written after examining many thousand school children and college students and determining the thoracic index—the ratio of the width to the depth of the chest. Contrary to the belief of the majority of physicians it was found that the round deep chest with a higher thoracic index is associated more frequently with tuberculosis than the wide flat chest. Correlating the thoracic index to age, sex, weight, height,

vital capacity, racial stock and environment, he concludes that the round deep chest is associated with a retarded physical development, which occurs more frequently in an unsuitable environment than a more favorable one. Children with rounded shoulders and deeper chests should be watched carefully if tuberculosis is to be prevented.

*Abstract of book by S. A. WEISMAN: Your Chest Should Be Flat. Philadelphia, Lippincott, 1938.*



## THE TREATMENT OF THE "HIGHER" TYPES OF PNEUMONIA WITH SPECIFIC SERUM\*

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Treatment of pneumonia caused by Types I and II pneumococci with specific serum is now recognized as an established therapeutic procedure of great value. On the other hand, since sera for use against pneumococci of the remaining types have been available for only a short period of time, their worth must be tested by

TABLE 1

*Type Distribution of Pneumococci in 352 Cases of Pneumonia*

| TYPE       | NUMBER | PER CENT | TYPE   | NUMBER | PER CENT |
|------------|--------|----------|--------|--------|----------|
| I          | 88     | 25.0     | XVI    | 7      | 2.0      |
| II         | 14     | 3.9      | XVII   | 5      | 1.4      |
| III        | 31     | 8.8      | XVIII  | 6      | 1.7      |
| IV         | 14     | 4.0      | XIX    | 10     | 2.8      |
| V          | 21     | 6.0      | XX     | 1      | 0.3      |
| VI         | 12     | 3.4      | XXI    | 5      | 1.4      |
| VII        | 25     | 7.1      | XXII   | 7      | 2.0      |
| VIII       | 29     | 8.2      | XXIII  | 3      | 0.9      |
| IX         | 9      | 2.6      | XXIV   | 4      | 1.1      |
| X          | 8      | 2.3      | XXV    | 7      | 2.0      |
| XI         | 6      | 1.7      | XXVII  | 4      | 1.1      |
| XII        | 10     | 2.8      | XXVIII | 4      | 1.1      |
| XIII       | 6      | 1.7      | XXIX   | 4      | 1.1      |
| XIV        | 7      | 2.0      | XXXI   | 3      | 0.9      |
| XV         | 1      | 0.3      | XXXII  | 1      | 0.3      |
| Total..... |        |          |        | 352    | 99.9     |

extensive clinical trial. We shall accordingly attempt to determine in the present paper the value of the specific serum treatment in 75 cases of pneumococcal pneumonia caused by pneumococci above Type II.

### TYPE DISTRIBUTION

Table 1 shows the etiologic distribution in 352 cases of pneumonia typed by us in Washington. It will be seen that, after the Type I pneumococci, which are responsible for 25 per cent of all pneumococcal pneumonias, the next

most frequent etiologic agents are Types III, VIII and VII pneumococci, causing 8.8, 8.2 and 7.1 per cent, respectively. Types V, IV and II are the other frequent types found in pneumonia. Accordingly, Types I and II pneumococci together are responsible for 28.9 per cent (or slightly less than one third) of pneumococcal pneumonias. Types III through VIII pneumococci cause 37.5 per cent (or slightly more than one third). The remaining one third is made up of the remaining Types IX through XXXII, none of which is responsible for more than 3 per cent.

### MATERIALS AND METHODS

The present series comprises patients in the wards of Gallinger Municipal Hospital and other hospitals in the City, and patients seen in the private or consultation practice of two of us. These cases, therefore, are believed to provide a representative cross-section of pneumococcal pneumonia in the City of Washington.

In most cases, antipneumococcal rabbit serum was used for treatment, this being kindly furnished by the Lederle Laboratories, Inc., and the Gilliland Laboratories. In some of the pneumonias caused by Types IV, V, VII or VIII pneumococci, horse serum manufactured by the Lederle Laboratories was used.

After a history and physical examination were obtained, the sputum typed and a leukocyte count made, an attempt was made to calculate the total dose<sup>1</sup> of serum that the patient would require. When hypersensitiveness had been excluded by intradermal, conjunctival and intravenous tests with dilute serum, the total calculated dose was given intravenously by gravity, diluted in two or three times the amount of physiologic salt solution. This procedure was not used in the earlier cases nor when the pa-

\* Part of this work was done in conjunction with the Pneumonia Control Program of the District of Columbia.

tients were treated in their homes. In these instances the serum was given undiluted, in two or more injections, of ascending amounts of serum, usually 1 cm. for the first injection, 15 or 20 cm. for the second and the remainder for the third injection.

#### REACTIONS FROM SERUM

Before we consider the beneficial results of specific serum, it may be desirable to see whether

TABLE 2  
*Serum Reactions and Serum Sickness*

|                         | HORSE SERUM<br>(25 CASES) | RABBIT SERUM<br>(42 CASES) |
|-------------------------|---------------------------|----------------------------|
| Allergic Reactions..... | 7 (28%)                   | 8 (19%)                    |
| Thermal Reactions.....  | 4 (12%)                   | 23 (55%)                   |
| Serum Sickness.....     | 5 (20%)                   | 7 (22%)                    |

it is potentially harmful. Table 2 shows the side effects of the use of horse serum in 25 cases and of rabbit serum in 42 cases. Allergic reactions occurred in 7 cases (or 28 per cent) of the cases treated with horse serum and in 8 cases (or 19 per cent) of those treated with rabbit serum. These reactions varied from a mere drop in the systolic blood pressure during the intravenous test with a 1 to 100 dilution of the serum to extensive urticaria or asthma. These results coincide with the general impression that fewer persons are allergic to rabbit than to horse sera.

Only 4 (or 12 per cent) of the patients treated with horse serum experienced a chill following the injection, while 23 (or 55 per cent) of the patients who received rabbit serum suffered from a chill or a rise in temperature without a chill. These chills were severe in 3 cases only, and in none did they endanger the life of the patient. This comparison between horse and rabbit sera is not fair, however, since all of the rabbit sera used were sent to us by the commercial firms mentioned above for clinical testing to determine the presence of chill-producing substances, while the horse serum used was purchased after having been tested already. The recent samples of rabbit serum which we have received seem to be so much improved that chills do not occur any

more often than after administration of horse serum.

Serum sickness, consisting of fever, with or without a rash, arthralgia and lymphadenopathy occurring about 10 days to 2 weeks after the injection of the serum, was present in both groups to the same extent—in 22 per cent of the patients treated with rabbit serum and 20 per cent with horse serum.

#### RESULTS OF TREATMENT

In order to evaluate the mortality rates for the treated cases, we have collected data on all patients with whom we have come in contact who were suffering from pneumonia caused by the same types of pneumococci. As shown in

TABLE 3  
*Results of Treatment*

| TYPE       | UNTREATED   |             |               | TREATED     |             |               | TREATED IN<br>FIRST 3 DAYS |             |               |
|------------|-------------|-------------|---------------|-------------|-------------|---------------|----------------------------|-------------|---------------|
|            | Total Cases | Number Died | Mortality (%) | Total Cases | Number Died | Mortality (%) | Total Cases                | Number Died | Mortality (%) |
| III        | 26          | 6           | 35            | 9           | 2           | 22            | 3                          | 0           | 0             |
| IV         | 12          | 6           | 50            | 4           | 0           | 0             | 3                          | 0           | 0             |
| V          | 11          | 3           | 27            | 10          | 0           | 0             | 4                          | 0           | 0             |
| VI         | 12          | 4           | 33            | 3           | 1           | 33            | 0                          | —           | —             |
| VII        | 12          | 3           | 25            | 19          | 0           | 0             | 10                         | 0           | 0             |
| VIII       | 13          | 3           | 23            | 16          | 3           | 19            | 8                          | 0           | 0             |
| XII        | 6           | 3           | 50            | 3           | 0           | 0             | 0                          | —           | —             |
| XIV        | 10          | 2           | 20            | 4           | 1           | 25            | 2                          | 0           | 0             |
| XVI        | 5           | 1           | 20            | 1           | 0           | —             | 0                          | —           | —             |
| XVII       | 3           | 3           | —             | 1           | 0           | —             | 0                          | —           | —             |
| XIX        | 7           | 4           | 57            | 3           | 1           | 33            | 1                          | 0           | 0             |
| XXIII      | 1           | 0           | —             | 1           | 1           | —             | —                          | —           | —             |
| XXVII      | 3           | 1           | 33            | 1           | 0           | —             | 1                          | 0           | 0             |
| Total..... | 121         | 39          | 32            | 75          | 9           | 12            | 32                         | 0           | 0             |

table 3, the mortality rate for those cases not treated with specific serum varied from 20 to 57 per cent, according to the type of pneumococcus. The average mortality for the entire group was 32 per cent, a figure which is usually considered to be an average death rate for pneumonia.

Seventy-five patients were treated with specific serum, with an average death rate of 12 per cent. The exact time of onset was known for 66 of these patients, and approximately one

half of them, or 32 patients, were treated within the first 3 days of the disease. There was not a single death in this latter group of patients treated within the first 72 hours.

Among the cases treated with serum both early and late, the mortality rate was reduced in every type except Types VI and XIV, when compared with a control group. The results were particularly good in Types V and VII in-

dropped below 100°F. within 24 hours after the first dose of serum was administered and remained below this figure.

Twenty-five per cent of patients ill with Type VII pneumonia and not treated with specific serum died, while no patient died who was so treated. The serum reduced the average hospital stay per patient from 14.4 to 12 days, and in 72 per cent of all cases treated with serum the temperature dropped and remained below 100°F. within 24 hours after treatment was begun.

TABLE 4  
*Results Obtained in Treatment of Types V and VII  
Pneumococcal Pneumonia*

|                                      | TOTAL CASES | NUMBER DIED | MORTALITY (%) | AVERAGE STAY IN HOSPITAL (DAYS) | TEMPERATURE 100°F. IN 24 HOURS AFTER SERUM |
|--------------------------------------|-------------|-------------|---------------|---------------------------------|--------------------------------------------|
| Type V                               |             |             |               |                                 |                                            |
| Not treated with specific serum..... | 11          | 3           | 27            | 20.8                            | —                                          |
| Treated with specific serum..        | 10          | 0           | 0             | 11.0                            | 77%                                        |
| Type VII                             |             |             |               |                                 |                                            |
| Not treated with specific serum..... | 12          | 3           | 25            | 14.4                            | —                                          |
| Treated with specific serum..        | 19          | 0           | 0             | 12.0                            | 72%                                        |

fections as shown in table 4. In cases of Type V pneumonias, not only was the mortality rate reduced from 27 per cent in the untreated cases to zero in the cases specifically treated, but also the average number of days spent in the hospital by patients was reduced from 20.8 to 11, a decrease of over 10 days per patient. The saving in money from the decreased hospital expenses would approximately pay for the serum used in the average case. In 77 per cent of the specifically treated cases, the temperature

#### SUMMARY AND CONCLUSIONS

Collected data on 75 cases show that patients with pneumonia caused by pneumococci other than Types I and II are benefited by the use of specific serum, whether made from horses or rabbits. Hypersensitiveness to rabbit serum is not present in as great a proportion of patients as is allergy to horse serum, whereas the percentage of serum sickness is about the same for both groups.

Results, as evidenced by a reduction in the mortality rate and decrease in the average length of hospital stay, were particularly good in cases of Types V and VII, as compared with cases not treated with specific serum. Treatment with sera of Types III and VIII shows some promise. Cases caused by other types of pneumococci were treated in fewer numbers. More work must be done before we can be sure of the value of serum in pneumonias caused by Types III and VIII and the rarer types of pneumococci.

#### BIBLIOGRAPHY

1. DOWLING, H. F.: Important Points in the Treatment of Pneumonia with Specific Serum. *Virginia M. Monthly*, 1937, 63, 739.

**Tuberculin Sensitivity** has been used in Cleveland as a means of finding early cases of pulmonary disease in the adolescent child without great cost. The small and slowly decreasing number of reactors in the first grade and the high schools, the low morbidity and mortality in both sexes below the 35-year limit, and the drop in unreported cases all support the theory that a consistent use of this method of attack should make

tuberculosis a relatively rare disease in about ten years. The fewer cases there are in a community, the more necessary it is to use the tuberculin test among children to locate them. Tuberculin testing eliminated tuberculosis among cattle. It can do the same for man using the reaction as a means of finding tuberculosis in the child's environment rather than in the child himself.

*Abstract of article by EDWARDS, Lancet, 1939, 59.*



## DIVERTICULUM OF THE FEMALE URETHRA

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Painful, fluid-filled pouches of the female genitourinary tract, located at or immediately above the introitus of the vagina and communicating with the urethra, have been described in the literature under such titles as urethrocele, urethral diverticulum and suburethral abscess. Young and McCrea<sup>1</sup> in their review of this subject in 1937 credit Sir Charles Mansfield Clarke in 1814 and again in 1831 as the first to report this condition. In 1871 Bozeman<sup>2</sup> published the first American article on this subject. Routh,<sup>3</sup> reviewing the subject in 1891, found that 20 cases had been reported prior to this date. He defined the diverticulum as "a urinary pouch or cyst communicating with a urethra of normal caliber, usually in its middle one-third, by an orifice relatively narrow." Dissenting writers object to the application of the term diverticulum to many of these pouches on the grounds that, when the sac is dissected free, its wall is found to be composed of inflammatory or granulation tissue and not mucosa, submucosa and muscularis. Irrespective of the histologic structure of the wall of these pouches, they are now usually grouped as diverticula, and two theories have been advanced regarding their etiology. The first theory, that they are congenital in origin, is supported in part by the occurrence of diverticula in the gastrointestinal tract and in other parts of the genitourinary tract, and furthermore, by the fact that diverticula of the urethra have been reported at birth. The second theory, that they are acquired, is the one most widely accepted and follows the idea as advanced by Amand Routh. He attempted to explain them as due to closure of the ducts of the urethral glands with the formation of retention cysts which subsequently became infected and ruptured into the urethra. Lower and Tormey<sup>4</sup> are of the opinion that most of the diverticula reported in their series occurred secondary to obstruction to the urinary outflow. This may be brought about by narrowing of the urinary meatus by stricture formation from

infection in the urethral glands, or as a result of trauma to the anterior vaginal wall and urethra following childbirth. When these factors are present the back pressure within the canal incident to voiding may distend the sac.

Many of the smaller sacs remain asymptomatic and thus escape diagnosis. The larger pouches never completely empty themselves during micturition, become infected and then produce a characteristic train of symptoms, the most common ones of which are frequency, burning and dysuria. To these are added a sense of discomfort referred to the bladder and pelvis when sitting, dyspareunia, and an involuntary escape of urine.

The diagnosis of this condition is relatively simple. Examination will reveal a visible, palpable swelling of the anterior wall of the vagina which can be emptied by digital pressure with expulsion of its contents out through the urethra. The urethroscope will frequently reveal the site of the ostium in the floor of the urethra, and the pouch can be demonstrated roentgenologically.

In regard to the treatment of this condition, simple excision with closure of the opening and diversion of the urinary stream by catheter for 7 to 10 days is the method of choice. Cures have been reported following the injection of sclerosing solutions as well as by simple incision and drainage.

The following case illustrates the salient features of this condition.

### REPORT OF CASE

Miss M. H., white, single, aged 29, came in on June 9, 1937, complaining of painful micturition, irritable bladder, and a sense of discomfort and bearing down referred to the bladder and vagina, particularly when sitting, and a discharge of fetid urine from the urethra. She stated that these symptoms had been present before her operation for bad "tubes" in 1934, and had continued ever since. She had had 5 pregnancies, 4 of which had been terminated artificially and 1 by spontaneous miscarriage at 6 months. She admitted having had gonorrheal infection in 1928 for which she was

treated and reported cured. At the pelvic operation performed in 1934, both tubes, left ovary and appendix were removed. Positive cervical smears for gonorrhea were reported in 1936 and during March 1937 she had bronchopneumonia. During her stay in the hospital for this illness, she developed a generalized skin rash which proved to be luetic, for which she is now being treated. Between her various hospital illnesses she had also spent several months of her time in the psychiatric ward of the city hospital for alcoholism and mental observation. In fact, the general impression gathered from talking to her was that her regular place of abode since 1934 had been in hospitals with infrequent intervals on the outside occupied in riotous living. She stated that she had peddled her complaints to so many different doctors

on pressure expelled approximately one-half ounce of foul urine from the urinary meatus.

Urethroscopic investigation under nupercaine anesthesia revealed a generalized urethritis. A narrow slit-like opening appeared in the floor of the urethra about 3 cm. within the external meatus. Vaginal palpation with the instrument in place enabled pressure to be exerted over the mass invaginating the anterior wall. With simultaneous withdrawal of the beak of urethroscopic sheath, pus was noticed escaping through a small ostium into the lumen of the urethra.

It was decided to operate upon the patient with the object of dissecting out and completely excising the diverticulum. The genitalia were prepared and the

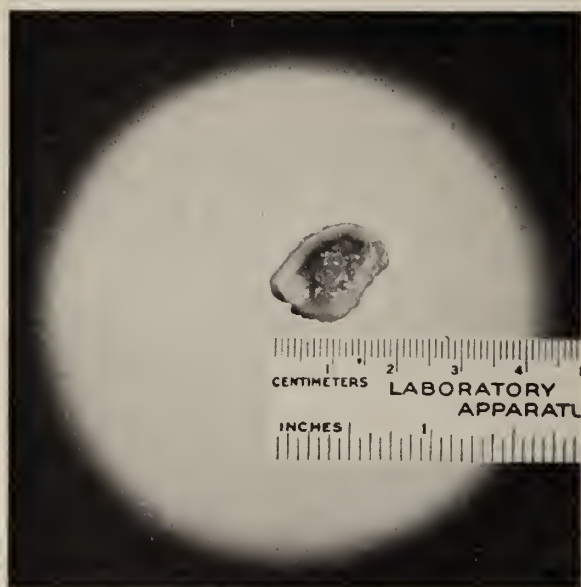


FIG. 1. The base of the sac after the neck had been removed and the pouch opened.

that now no one would listen to her but that they were real and not imaginary and she wanted relief.

Examination revealed a high-strung, intelligent young white woman, quite nervous and easily upset. Her right arm was congenitally smaller than the left one, but with the exception of limitation of motion in the elbow joint, is still usable. The examination of her chest revealed no evidence of disease. The abdominal examination was negative except for a low mid-line scar. Bimanual examination revealed the uterus to be small, in good anterior position, but of somewhat limited movability. The left tube and ovary had been removed. The right ovary was moderately enlarged, soft and tender. Careful digital examination of the anterior vaginal wall and urethra revealed a pouchlike swelling situated about the middle one third of the canal which

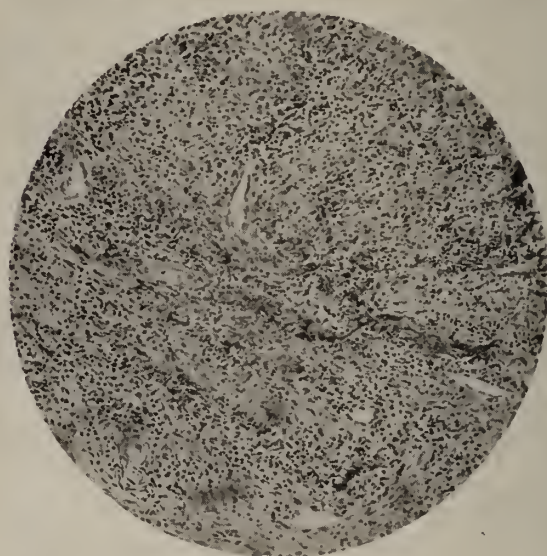


FIG. 2. Microscopic appearance of the wall of the sac showing fibromyomatous stroma with extensive diffuse infiltration by leukocytes and plasma cells.

vaginal mucosa was cleaned and swabbed with antiseptic as per routine. Under general anesthetic (ethylene) the operative field was exposed with speculum and retractors. A no. 28 French metal sound was introduced into the urethra for orientation and the anterior vaginal wall meticulously dissected. The sphincter muscle was studiously avoided while the sacculated mass was freed from surrounding tissues down to the urethral wall where it was clamped, divided and removed. The urethra was closed with two layers of no. 0 chromic catgut, down to and not including mucosa. The vaginal wall was closed with similar sutures and packed with 2-inch gauze. A no. 18 French Pezzer retention catheter was gently placed into bladder by means of a stylet obliterating mushroom, which was withdrawn leaving the catheter in situ.



The pathologic report by Dr. Janvier W. Lindsay was as follows:

"The specimen submitted for examination (fig. 1) measures 2 cm. in diameter and presents a fairly well defined inner border with a necrotic base. Paraffin sections (fig. 2) show the wall of the structure to consist of a fibromyomatous stroma with extensive diffuse infiltration by leukocytes and plasma cells. Superficially there is a very dense plasma-cell infiltration. There is no definite lining membrane. Diagnosis: infected urethral cyst or abscess."

The postoperative convalescence was uneventful except for the fact that the catheter was removed on the seventh day. The patient was able to void normally within 3 hours in spite of a spinal puncture performed in the meanwhile. A checkup 6 months later revealed satisfactory union, normal urinary findings, good bladder function and a complete symptomatic cure.

## SUMMARY

A brief consideration of the subject of diverticula of the female urethra, together with the report of a case cured by simple excision with closure of the urethra and diversion of the urinary flow has been presented.

## BIBLIOGRAPHY

1. YOUNG, B. R., AND MCCREA, L. E.: Urethrocele; Urethral Diverticulum; Sub-urethral Abscess in Female; Roentgen Appearance; Treatment; Review of Literature; Report of Case. *Urol. & Cutan. Rev.*, 1937, **41**, 91.
2. BOZEMAN, N.: Urethrocele, Catarrh and Ulceration of Bladder in Females. *Am. Jour. Obst.*, 1871, **3**, 656.
3. ROUTH, A.: Urethral Diverticula. *Tr. Obst. Soc. Lond.*, 1891, **32**, 69.
4. LOWER, W. E., AND TORMEY, T. W., JR.: Diverticulum of Female Urethra. *Ann. Surg.*, 1938, **107**, 923.

## TULAREMIA

### THE FIRST KNOWN INSTANCE IN THE DISTRICT OF COLUMBIA

CHARLES R. L. HALLEY, M.D., *Associate in Medicine, George Washington University School of Medicine*

Once a new disease has been brought to the attention of the medical profession, one of the most interesting problems concerns the length of time during which it may have been present in a community prior to the first recognition. Obviously, for many diseases this question cannot be answered, although frequently there is reason to believe that a given condition, more especially an acute infectious disease, may have been for an indefinite period either entirely unrecognized and unsuspected, or else confused with some closely similar condition. Every physician can readily call to mind instances of disease which has undoubtedly existed for a greater or lesser interval prior to the first description.

Certain diseases, for example, typhoid fever, are characterized by serologic changes which may be either permanent or else persistent for many years in the serum of the host. Of all this group of conditions, tularemia is perhaps the most remarkable in that a positive agglutination test in high titer against the specific organism may persist for many years, perhaps for the lifetime of the host.

In 1928, Brosius<sup>1</sup> and Simpson<sup>2</sup> each reported instances of tularemia which had first been definitely diagnosed by means of agglutination tests performed many years after the original illness, the true nature of which had not been appreciated; indeed, in many patients the illness had occurred long before the entity had been described in man.

The first patient described by Brosius, after having dressed wild rabbits in October 1909, developed first a local lesion on a finger, then severe constitutional symptoms, and finally a regional epitrochlear and axillary adenopathy. Eighteen years later the blood serum agglutinated *Pasteurella tularensis* in dilutions up to 1:160. The second patient, who in November 1921 had dressed wild rabbits, likewise developed a local lesion, constitutional symptoms, and regional adenopathy. Six years later the blood serum agglutinated the organism in dilutions up to 1:180.

Simpson presented in detail a series of 24 patients who had had years previously the characteristic history of local lesion, adenopathy and a severe illness after having dressed wild



rabbits. At intervals ranging from 15 months to more than 19 years after the original illness, serum from each of these patients was found to agglutinate *Pasteurella tularensis* in high titer, thus after many years establishing the true nature of the former infection.

To date, the first proved instance of the disease in the District of Columbia occurred in the patient of Dr. J. Lawn Thompson, an account of which is included in the article by Francis.<sup>3</sup> After having dressed wild rabbits in November and December 1921, the patient developed a fever and axillary adenopathy. Six months later the diagnosis of tularemia was first established when the blood serum agglutinated the organism in dilutions up to 1:320.

Francis has commented that in the case of no other disease, so far known, may the true diagnosis be made with such certainty many years after the original illness. Obviously, this is possible because of the persistence of the specific agglutinations in high titer.

The following account is presented to illustrate first, that a definite diagnosis of tularemia may be made, in this instance, 15 years after the original illness, and secondly, to record what is believed to be the earliest known occurrence of the disease in the District of Columbia.

#### REPORT OF CASE

The patient, a man born in December 1887, was first seen in April 1935 because of "nervousness." He had had the usual diseases of childhood, possibly malaria twice, and for many years a chronic sinusitis. Within recent months there had developed numerous ill-defined digestive symptoms, including gaseous distension and pressure, eructations, and rather severe constipation. Hemorrhoids and pruritus ani had been noted occasionally for about ten years. Once "yellow jaundice" had occurred. After marriage in 1916, there had been first a stillbirth, then 3 healthy children, aged 16, 14 and 12 years. The nervous symptoms included numbness of one foot, occasional dizziness, poorly localized itching, a frequent feeling of weakness, irritableness, a marked sense of depression, some recent difficulty in sleeping, numerous unpleasant dreams, indefinite nervous

sensations in the legs and up to the head, and some desire to weep.

While these data were being secured, the patient stated that "15 or 20" years previously, while dressing a rabbit, he had injured the nail of a finger. There resulted an infection in the axilla, on account of which incision had been performed at the Georgetown University Hospital.

The physical examination, urinalysis, blood counts, and Wassermann test yielded findings which led to the final diagnosis of a mild agitated depression, bilateral acute maxillary sinusitis, slight retinal arteriosclerosis, and small internal hemorrhoids.

Because of the history of an infectious process many years previously after having dressed a rabbit, a specimen of blood was sent to the National Institute of Health. The serum gave complete agglutination against *Pasteurella tularensis* in a dilution of 1:160, indicating that at some previous period this patient had had an infection with this organism. At no other time during his entire life, so far as could be determined from a detailed history, was there any other illness which could possibly represent tularemia, except the one which had occurred as described.

The record at Georgetown University Hospital (no. 1675) revealed that this patient had been admitted on January 6, 1920, with a temperature of 104.8°F. The diagnosis was "axillary adenitis." After incision and drainage, the patient had been discharged on January 10, 1920. There was no entry to indicate that either a smear or a culture had been made from the abscess.

The report of this patient illustrates two very interesting points:

1. A definite diagnosis of tularemia was made 15 years after the original illness, the true nature of which had not been suspected at the time.
2. This is, at the present time, the earliest known instance, in the District of Columbia, of infection in man with *Pasteurella tularensis* resulting in clinical disease.

#### BIBLIOGRAPHY

1. BROSIUS, W. L.: Two Cases of Tularemia. *J. A. M. A.*, 1928, 90, 910.
2. SIMPSON, W. M.: Tularemia (Francis' Disease); Clinical and Pathological Study of 48 Non-fatal Cases and One Rapidly Fatal Case, with Autopsy, Occurring in Dayton, Ohio. *Ann. Int. Med.*, 1928, 1, 1007.
3. FRANCIS, E.: Tularemia. *J. A. M. A.*, 1925, 84, 1243.

# MEDICAL ANNALS

of the

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### MEDICINE SPEAKS

Newspaper writers who, in their zeal for a cause, overplay their hand, discover before long that they cannot mislead the public without being found out. Recently, a Washington columnist took the American Medical Association to task for the inadequacies of physicians who appeared before the Senate Subcommittee on Education and Labor in connection with the so-called Wagner Health Bill. An ardent supporter of the Bill, this writer presented extracts from testimony given before the Subcommittee to support his contention that these physicians were uninformed if not unintelligent.

This sort of thing is often misleading, and grossly unfair. Torn out of its context, testimony thus creates a distorted impression because important statements coming before or after have been omitted. That is just what this writer did, and perhaps intended to do. He closes his article with this comment: "They (the physicians testifying) left me with a feeling that if the medical profession wants to preserve its reputation, it should either get some new spokesmen or leave affairs of state severely alone."

To anyone who attended the hearings, and we were in constant attendance, such a statement is not only unwarranted but typical of the propagandist. The fact of the matter is that representatives of the medical profession

who appeared before the Subcommittee were, for the most part, well informed and presented their views most adequately. There were those who were obviously unprepared and this was to be regretted. But this was equally true of proponents for this legislation, as the transcript of testimony discloses.

To appreciate fully the worth of the testimony given, a reading of the complete transcript is essential. We feel, however, that we are justified in quoting from an excellent statement by Dr. Haven Emerson, Professor of Public Health Practice, College of Physicians and Surgeons of Columbia University, to show how studiously the Washington columnist avoided mentioning outstanding testimony given by physicians.

"The best contribution that could be made by the Federal Government to general health would be by re-establishment of confidence in self-support, and encouragement of private industry, earning capacity, and productive employment.

"Federal spending for the sick and for health cannot be relied upon as a panacea, for such inadequacies as can be shown to exist.

"There are measures which only the Federal Government can take to advance national health.

"First, the putting of its own administrative machinery in good order, by which I mean the development of a single Federal agency, whether bureau, board, or department under which all Federal health and medical functions—except those of the Army and Navy—should be served.

"The chief executive office of such a Federal Health Service should of course be professionally trained and experienced, as have been a long line of Surgeons General of the Public Health Service.

"Only through such a single Federal agency should State health officers have relation to the Federal Government for consultative advice, common policies, or for financial aid when emergency or persistent economic difficulties prevent a particular State, or region, or population unit from receiving protective and other medical care necessary for the people's safety and security of life.

"Among the many administrative disadvantages of the Wagner bill provisions is the triple-headed character of Federal direction through which grants-in-aid of States for six separate and distinct functions would be administered.

"If grants-in-aid are needed in the future, as they have often been needed and made in the past, for health and medical care, the allotting of funds should be in



response to specific and proved evidence of need and request for aid by a particular State or group of States presented by the State health officer to the Federal agency authorized to extend financial aid, and preferably with confirmation of the need and extent of it by officers of the Public Health Service.

"Grants should not be offered or urged upon the States to promote some Federal theory of social improvements, nor should grants be made to any State which is able to finance its own appropriate program of health services and care of the medically needy. It seems to us unreasonable to suppose that every State in the Union needs Federal aid to carry out the functions of government long recognized as duties of the State or its political subdivisions. . . .

"It is obvious that those who have shared in drafting the Wagner bill have confused in their minds the duties, or functions and capacities of the health officer, with those of physicians and surgeons concerned with care of the sick.

"Health officers, except where appointed on a purely political basis, are selected because they are professionally trained and experienced in sanitation and preventive medicine, a specialty as distinct from internal medicine or surgery as plumbing is from carpentry. . . .

"Briefly, we advise that, before attempting any such costly and considerable revolution in the source of funds, in regulation and supervision of health and medical services in the States by the scheme of Federal subsidies, in the complicated manner proposed in the Wagner bill, the intent of the President's Executive Order 7481 should be carried out, and 'better coordination in Federal health work' be the first concern of the Congress.

"We offer our professional support for any well-considered plan to aid backward, economically unfavored States to have health and medical care equal to that of the rest of the country, and we suggest certain principles upon which a sound Federal program of needed grants might be based.

"We oppose the Wagner bill as it is at present offered for consideration, because it appears to us to be unnecessary, costly, subversive of sound relationships between Federal and State financial resources and governments, and we very much doubt whether the results hoped for by its proponents would be achieved if the present bill were to be enacted into law. . . ."

Many others made equally fine statements and responded well under questioning. Dr. Morris Fishbein, Editor of the *Journal of the American Medical Association*, made a significant point in the following discussion:

DR. FISHBEIN. . . . Now, then, as we have considered the development of the Wagner Act, it has appeared

to us that there has been a relentless, persistent, almost a ruthless, drive for the development of this legislation over a certain period of time, and we trace this development from the beginning of the national health survey which, as you know, was a house-to-house canvass of 750,000 urban and 50,000 rural families, made by 4,500 W. P. A. workers under the direction of the United States Public Health Service.

SENATOR WAGNER. Doctor, you use a rather strong term and I don't know that I was guilty of any such offense. I never intended to indulge in ruthlessness.

DR. FISHBEIN. I will endeavor to explain the term as I go along.

SENATOR WAGNER. I would like to have it explained now.

DR. FISHBEIN. What I would point out is that we see a definite development of this legislation without any opportunity being given, although frequently offered, to the medical profession, to consult with those who were developing the national health program, the national health conference, and the development of the bill itself, which grew out of the national health program.

SENATOR WAGNER. Well, Doctor, of course I am not acquainted with all of these activities you talk about, but a Dr. Booth from my own State appeared before this committee early and I think it was Senator Ellender that asked him if he wouldn't cooperate with the committee by suggesting amendments.

DR. FISHBEIN. We are now up to the committee. I referred to the time of the drafting of the bill.

SENATOR WAGNER. Yes; I know.

DR. FISHBEIN. The committee has been more than kind in giving us full opportunity to present the point of view of the medical profession. This is the first occasion on which such an opportunity has actually been given.

SENATOR WAGNER. Well, of course, this is the first occasion that we have had hearings on the bill.

This is the time to cooperate.

DR. FISHBEIN. I refer largely to those who are concerned with the development of the national health program, the national health conference, the hearings on the national health program, after it was developed, and the time of the drafting of the bill. I have no objection whatever to saying again that I believe the fullest opportunity is now being given here to the medical profession as represented by the American Medical Association for the first time to express its point of view.

SENATOR ELLENDER. Doctor, in that connection, are you aware of the fact that many of the bills that are introduced and upon which hearings are held, you wouldn't recognize them after they got out of this committee?

DR. FISHBEIN. I am quite sure of that.



Medicine has spoken, and has done so in a manner to reflect credit upon the medical profession.

### WAR ON AUTOMOBILE ACCIDENTS

Upon the suggestion of Commissioner Melvin C. Hazen, a communication was directed to the Medical Society by the Traffic Advisory Council of Washington through the chairman of its Traffic Safety Promotion Committee requesting the Society's cooperation in an educational campaign to prevent a recurrence of the child traffic fatalities of last Summer. At its Annual Business Meeting on May 3, 1939, the Society authorized the establishment of a Committee on Automobile Accidents to study the accident situation from the medical standpoint and to cooperate with the Traffic Advisory Council.

Traffic accidents, certainly, have a medical phase and it would seem that a splendid opportunity is afforded our Society to render an invaluable service to the community. In many states committees of physicians have aided in developing methods for the protection of the public against physically and mentally unfit who menace our highways. The American Medical Association has also carried on a thorough investigation of the cause of automobile accidents. Their experience should prove helpful to the excellent committee which has been chosen to carry on this program for our Society.

Some startling facts are to be found in a report of the Safety and Traffic Engineering Department of the District of Columbia Motor Club indicating that on the average 70 per cent of fatality victims are pedestrians. For example, of the 821 fatality victims in the District from January 1, 1931 to November 30, 1938, 579 were pedestrians. During this period 27 pedestrians were injured to every pedestrian killed. An analysis shows the fatalities of this group increase sharply after fifty, and that the hazard is much greater by night than by day.

For the years 1931 to 1938, 106 children were killed in traffic. In 1938 alone 888 children pedestrians suffered injuries.

These statistics should be ample evidence that much needs to be done to make Washington safe from automobile hazards. An active and permanent campaign must be carried on to insure our citizens the safety to which they are entitled.

### ADMINISTRATOR CHOSEN FOR M.H.S.

At its meeting on May 31, 1939, the Board of Trustees of Mutual Health Service employed Mr. Hugh G. Buhrman as Administrator. The Board exercised great care in its selection. Applications were received from more than one hundred and fifty persons and some twenty-five were interviewed.

Mr. Buhrman has had considerable organization experience. He was formerly associated with the American Red Cross as Liaison Representative and Field Director, later as Director of Roll Call and Public Relations of the Brooklyn Chapter of the American Red Cross. Prior to his association with the Red Cross, Mr. Buhrman was in the real estate business in Washington, and for a time shortly after the War, with the United States Shipping Board Emergency Fleet Corporation. Mr. Buhrman graduated in law from National University in 1919. He comes to the Medical Society highly recommended by all those who have been associated with him.

The Board is confident that Mr. Buhrman possesses the ability to conduct Mutual Health Service successfully. As this is written, Mr. Buhrman is completing plans for early occupancy of temporary quarters on the third floor of the Medical Society's building. The space to be occupied, previously used for storage, will be reconditioned for office purposes.

Much groundwork needs to be done before the Service can be put into operation. Records, forms and financial records must be developed. The Administrator must also familiarize himself with the local medical situation. Despite the delay because of these necessary preparatory steps, Mutual Health Service should be ready to accept subscribers on or before July 1.

Officers of Mutual Health Service for the com-

ing year are: Dr. Arch L. Riddick, President; Dr. Thomas E. Mattingly, Vice President; Mr. Theodore Wiprud, Secretary.

The Service is under the direction of the Board of Trustees consisting of: Dr. Henry R. Schreiber, Chairman; Drs. Harry F. Dowling, A. Clagett Gray, William P. Herbst, Kate B. Karpeles, Thomas E. Mattingly, Luther H. Reichelderfer, Arch L. Riddick.

### THE DAVIDSON LECTURE

The fifth Davidson Lecture is to be given on October 11, 1939. Physicians and scientists who wish to compete for the privilege of being the lecturer on that occasion must observe the following rules:

"The selection of the Davidson Lecturer shall be on the basis of competition, the winning essay to be selected by a subcommittee consisting of five (5) members of the Executive Committee appointed by the Chairman. No member can serve on the committee who may desire to compete.

"The competition shall be thrown open to physicians or other scientists working in the District of Columbia.

"The essays to be submitted must bear no indication of the author's identity, being signed by a nom de plume. The identification of the author must be in a sealed envelope bearing on its surface the same nom de plume. No essay may be submitted that has been published.

"Essays should be submitted to the Secretary of the Medical Society of the District of Columbia not later than the *first of September* of odd number years.

"In case no essay is found worthy of an award, the subcommittee shall declare no award; the lecturer then to be selected by the full Executive Committee."

It was necessary to change the closing date on which essays can be submitted from July 1 to September 1 to provide ample opportunity for all those who wish to submit their material. It is desired that wide publicity be given this contest so that as many Washington physicians and scientists participate as possible.

The Chairman of the Subcommittee of the Executive Board is Dr. William J. Mallory. Other members of the subcommittee are Drs. Thomas E. Neill, Henry C. Macatee, Don Johnson and Daniel L. Borden.

Remember the closing date is September 1,

1939. All essays to be submitted must be in the hands of the committee not later than that date.

### TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The regular meeting of the Washington Society of Pathologists was called to order by the President, Dr. J. W. Lindsay, at 1:30 p.m., Saturday, April 1, 1939, in the Army Medical Museum. There were 27 members and 2 guests present.

Dr. J. S. Shaver of the U. S. Naval Hospital was unanimously elected to Associate membership.

Dr. George Tolstoi proposed that a panel on the recent advances in the anemias be prepared by Drs. Choisser, Lindsay, Brilmyer, Hunter, Neuman, Ragle and Whitmore for The Medical Society of the District of Columbia, May 10, and that Captain DeCoursey act as the mediator.

#### *Presentation of Cases*

**Dr. Thomas M. Peery** presented 2 microscopic sections from an elderly white man who had pain in his chest. The X-ray showed the appearance of a mass in the periphery of the lung. An abscess of the lung was drained. Tumor of the lung was also suspected. The first section was of mucus-like material from the sputum. The second section was from the lung and showed the presence of an epidermoid carcinoma.

**Dr. R. D. Lillie** presented microscopic slides demonstrating the Gallego method for staining elastic and connective tissue.

**Dr. George Tolstoi** presented tissue removed from the vulva which proved to be an endometriosis. For the past 2 months the patient states that at each menstrual period the gland swelled.

**Dr. James S. McCartney**, a guest from Minneapolis, Minnesota, presented 2 microscopic slides, one from an almost solid tumor of the ovary, 8 or 9 cm. in diameter, shaped like a football with a distinct mass of colloid. The sections showed nothing but thyroid tissue and nothing that looked malignant. Two years later the patient had pain in the ischium. X-ray examination showed a large tumor of the ischium, metastatic giant cell tumor or osteogenic sarcoma. Histologically, the removed tumor showed a structure which is identical with that in the ovary. It has not been proved that this is actual thyroid tissue, but a biochemical test is being planned.

The lesion has been considered as a teratoma in the ovary with metastasis to the ischium.



**Dr. Thomas F. Crahan** presented microscopic slides from a 26-year-old white man whose clinical diagnosis was tuberculosis and the gross anatomic diagnosis pulmonary tuberculosis. This material was submitted through the courtesy of Dr. Frederick Proescher, pathologist, Santa Clara County Hospital, California, from a case of coccidioidal granulomatosis.

**Dr. Walter Freeman** presented microscopic slides from a white man, 32 years of age, who complained of low back pain and weakness of the legs since November 1937. The onset was a few days after he lifted his wife up in a playful bout. The pain in the back was not constant and radiated down the thighs. A physician strapped his back and he was comfortable for a time. Later he consulted an osteopath and was relieved for a time. Kidney stones were suspected but not found. He was unable to continue working as a cab driver because his foot would slip off the brake and clutch. In December 1938 he fell while walking downstairs and fractured his ankle. He was in a cast for 4½ weeks, but after the bone healed was unable to walk on account of weakness in the legs and unsteadiness. There is a history of some loss of sexual function for the 6 months prior to admission. Abdominal reflexes were not elicited; the knee jerks were equal and active; there was no clonus; but the Babinski was positive on both sides. There was disturbed sensibility to vibration and position sense in both lower extremities and some disturbance in sensation to pinprick from the hips down and in the saddle area. Sensation was disturbed from the level of D-12 on the left or L-1 or -2 on the right. The spinal fluid was xanthochromic and showed 3 lymphocytes per cu. mm., 50 mg. of protein per 100 c.c., 740 mg. of chlorides, and 69 mg. of sugar. The colloidal gold curve was 0000111000. The Kahn test was negative. Fluoroscopic examination after lipiodol in-

jection showed a block at the level of the twelfth thoracic vertebra. At operation a rather firm, irregular and adherent reddish-gray mass over the dorsal aspect of the lumbar sac was found. Microscopic examination showed the mass to consist of small foci of cellular accumulations chiefly in relation to the blood vessels, separated from one another by a fairly coarse-grained connective tissue, hyalinized, with very few cells. The cells in the foci of exudate were mostly plasma cells, very well marked, but there were also lymphocytes and occasionally polymorphonuclear leukocytes and eosinophiles. The fat seemed to be invaded by the inflammatory tissue and there were a few small lymph-nodes in the fat that were also infectious. The diagnosis was granuloma, nonspecific, and chronic epidural abscess.

**Lt. Col. G. R. Callender** presented microscopic slides from the case of a white man, aged 49, who had increasing difficulty in breathing for the past three months. X-ray examination showed density throughout the right side of the chest with left displacement of the heart. Aspirated bloody fluid, 750 c.c., contained lymphocytes and pleural cells. At operation a 900-gram tumor attached to the mediastinum a little above and to the right of the heart was removed, but the patient gradually failed and died. Grossly, the tumor was mostly fibrous showing some softened areas and some areas of both recent and old hemorrhage. At autopsy metastases were found in the liver, adrenals and pancreas, and there was extensive involvement of the mediastinum and pericardium. The final diagnosis was teratoma of the right lung with extensive metastases to the liver, adrenals, pancreas and spleen.

The meeting adjourned at 3:30 p.m.

## REPORT OF DELEGATE ON PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ST. LOUIS CONVENTION, MAY 15-19, 1939

Your delegate attended all of the sessions of the House of Delegates, and contributed to the transaction of business by serving as Chairman of the Reference Committee on Miscellaneous Business. The items referred to this Committee were few and not controversial. Meetings of the Committee were therefore short, as it was not necessary to hear many delegates in support of the resolutions under consideration. The reports of the Committee were consequently brief and consumed little of the time of the House.

Among the items considered by the Committee was the resolution introduced by your delegate, at the instance of our own Society, urging the necessary appropriation to enable the Secretary of War to erect new buildings to house the Army Medical Museum and Library. This was reported favorably to the House and was unanimously adopted.

Your delegate, as well as Mr. Theodore Wiprud, our Secretary, attended the hearings held by a Special Ref-

erence Committee on the Wagner Health Bill (S. 1620). Many delegates and others appeared to present their views on the proposed legislation. It seems proper to state that, in our opinion, the preponderance of testimony given by delegates and others present was in favor of a conciliatory attitude toward the main purposes of the legislation. It was urged that efforts of the medical profession be directed toward amendment and modification of the Bill to bring its provisions more nearly in line with the objections and reservations attached to the general approval given by the American Medical Association in September 1938 of certain of the proposals of the National Health Program.

This was the attitude taken by your delegate in speaking before the Committee on behalf of our Society. The final report of the Committee, presented to the House of Delegates in executive session on Wednesday afternoon, recommended unqualified opposition to the Bill in its entirety. The determining factors which led to the



Committee's decision were no doubt varied, but probably the most potent factor was the absence of any provisions in the Bill looking toward the utilization or financial support of the voluntary and private medical facilities which have heretofore borne the great burden of providing medical care for the people of this country. This was looked upon as indicative of the attitude of the political forces back of the Wagner Health Bill.

The Committee's report was adopted without a dissenting vote.

It is urgently recommended that the proceedings of the House of Delegates currently appearing in the *Journal of the American Medical Association* be read by the entire membership.

H. C. MACATEE, M.D.,  
*Delegate*

## REPORT OF REFERENCE COMMITTEE OF HOUSE OF DELEGATES ON THE WAGNER HEALTH BILL

The following report of the Reference Committee to the House of Delegates was adopted May 17, 1939, without dissenting vote.

Your Reference Committee has carefully considered the bill designated as S. 1620, "A Bill to provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, and training of personnel; to amend the Social Security Act; and for other purposes."

### HISTORY OF WAGNER HEALTH BILL

This bill was introduced by Senator Robert F. Wagner of New York, February 28, 1939, and is commonly referred to as the Wagner Health Bill. The bill itself provides that, if it be enacted, it may be cited as the "National Health Act of 1939." The purposes of the bill are sufficiently stated in the title, but the bill itself must be recognized as a proposed amendment to the Social Security Act of 1935. The bill is intended to make effective a national health program recommended by the Interdepartmental Committee to co-ordinate health and welfare activities.

The House of Delegates of the American Medical Association, at its special session in Chicago, September 16 and 17, 1938, adopted five recommendations made by a special committee that had been appointed to consider and report on the National Health Program. It is important that this fact be borne in mind, for the bill now under consideration, which was drafted long after those recommendations were adopted and at a time when they were presumably known to the proponents of this bill, does not recognize either the spirit or the text of those recommendations. Any criticism of this bill by the Association is not to be construed, therefore, as a repudiation of any of the principles adopted by the 1938 Special Session of the House of Delegates.

### ANALYSIS OF THE BILL

S. 1620 proposes to amend Title V of the Social Security Act—Grants to States for Maternal and Child

Welfare—and Title VI—Public Health Work and Investigations—and proposes to add to the Social Security Act certain new titles: namely, Title XII—Grants to States for Hospital and Health Centers; Title XIII—Grants to States for Medical Care, and Title XIV—Grants to States for Temporary Disability Compensation.

Already some individuals and organized groups in the United States have appeared before the Senate Subcommittee which has this bill under consideration and have urged its immediate enactment. Although the stated objectives of the Wagner Health Bill are generally recognized as desirable, your committee cannot approve the methods by which these objectives are to be attained.

Repeatedly, physicians and all other qualified professional groups have recommended the coördination and consolidation of the health activities of the Federal Government. The Wagner Health Bill leaves existing and proposed preventive and curative medical services widely scattered through several federal agencies.

This bill does not in any way safeguard the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

It does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

The Wagner Health Bill proposes an extensive program in the field of "health, diagnostic, and treatment centers, institutions and related facilities," without defining their functions.

This bill proposes to make federal aid for medical care the rule rather than the exception, since it does not specifically limit its benefits to persons unable to pay for adequate medical care.

The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease and promotion of health.

This bill insidiously promotes the development of a complete system of tax supported governmental medical care, thus undermining and debasing present standards of medical services.

The House of Delegates in September 1938 urged compensation for the loss of wages during sickness. The Wagner Health Bill deviates from this suggestion by proposing to provide medical services in addition to compensation.

The Wagner Health Bill would authorize an enormous expansion of governmental medical services and therewith ultimately unlimited appropriations for its health program. The funds necessary would be so great as to increase still further the present burdensome general taxation.

The Wagner Health Bill provides for supreme federal control. Rules and regulations must be promulgated by the Chief of the Children's Bureau in the Department of Labor, the Surgeon General of the Public Health Service, the Federal Emergency Administrator of Public Works, and the Social Security Board. These federal agents are given authority to disapprove plans proposed by the individual states.

The House of Delegates at its September 1938 Session approved the expansion of preventive and other medical services when the need could be shown. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for which it proposes allotments of funds.

The provisions in the Wagner Health Bill that have never been considered by the House of Delegates are: the authorization of appropriations for studies, investigations and demonstrations, and the creation of federal and state advisory councils.

#### CONCLUSIONS

The Wagner Health Bill, as judged by the considerations that have been here presented, is inconsistent with the fundamental principles of medical care established by years of scientific professional medical experience, and in the opinion of your committee it is, therefore, contrary to the best interests of the American people.

For years the health of the people of the United States, as measured by sickness and death rates, has been better than that of most foreign countries, and this improvement has been continuous. The fortunate health conditions in the United States cannot be dissociated from the standards and methods of medical practice that have prevailed under the present system of medical practice.

No other profession and no other organization has done more for the prevention of disease, the promotion of health and the care of the sick than have the medical profession and the American Medical Association. No other groups have shown more genuine sympathetic interest in human welfare.

The contribution of the individual members of the American Medical Association to medical care is uni-

versally regarded as monumental in total volume. The contribution of the American Medical Association, through a program of medical education and the activities of its numerous councils which safeguard medical service, give abundant proof of interest in the problems of the national health. It has given continued consideration to these problems, whereas others show concern with these proposals because of a present but, it is to be hoped, a temporary need for relief. These are the groups which request revolutionary legislative action as indispensable for the extension and further diffusion of health facilities.

In view of its record and in consideration of the responsibility which American social history and the nature of medical care have imposed on the medical profession, the American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the nation's health and well-being.

The American Medical Association must therefore, speaking with professional competence, oppose the Wagner Health Bill.

#### RECOMMENDATIONS

Nevertheless, recognizing the soundness of the principles stated in the recommendations adopted by the House of Delegates at its special Session in 1938, namely, the expansion of preventive medicine and public health where need can be shown, the extension of medical care for the indigent and the medically indigent where the need can be demonstrated, with local determination of needs and local control of measures to supply these needs, your committee would urge the development of a mechanism for meeting these needs within the philosophy of the American form of government and without damage to the quality of medical services.

This question, as it relates to the aid to be given by an individual state to its own counties, municipalities or other local political units, is not immediately before this Association. The answer is to be found in the individual state constitutions and state statutes. Counties, townships and municipalities are creatures of the individual states and can be molded and guided by the state for its own purposes. The individual state, itself, is not a creature of the Federal Government. The Federal Government is, as a matter of fact, a creature of the individual states.

The fundamental question is how and when a state should be given financial aid by the Federal Government out of the resources of the states as a whole, pooled in the Federal Treasury. Disasters, such as floods, dust storms, fire and epidemics have long been recognized as justifying such Federal aid. No state or person has ever been heard to object to the use of funds out of the Federal Treasury for such purposes.



No one has ever proposed, however, that because Federal aid is extended under such conditions to a state in distress, a corresponding aid must be extended to every other state, regardless of its need. Nor has anyone ever been heard to say that Federal aid to a state in distress, because of flood, dust storm, fire or epidemic, shall not be extended, unless and until the suffering state has produced from its own treasury a stated amount of money to aid in affording the relief. The development of such bizarre thinking may be traced to those who have originated within comparatively recent years the granting of Federal subsidies—sometimes referred to as “grants in aid”—to induce states to carry on intrastate activities suggested frequently in the first instance by officers and employees of the Federal Government. The use of Federal subsidies to accomplish such federally determined activities has invariably involved Federal control. Any state in actual need of financial aid from the Federal Government for the prevention of disease, the promotion of health and the care of the sick should be able to obtain aid in a medical emergency without stimulating every other state to seek and to accept similar aid and thus to have imposed on it the burden of Federal control.

The mechanism by which this end is to be accomplished, whether through a Federal agency to which any state in need of Federal financial assistance can apply, or through a new agency created for this purpose or through responsible officers of existing Federal agencies, must be developed by the Executive and the Congress who are charged with these duties. Such method would afford to every state an agency to which it might apply for Federal assistance to enable it to care for its own people without involving every other state in the Union or the entire government in the transaction, and without disturbing permanently the American concept of democratic government.

#### SUMMARY

1. The Wagner Health Bill does not recognize either the spirit or the text of the resolutions adopted by the House of Delegates of the American Medical Association in September 1938.
2. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.
3. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.
4. The Wagner Health Bill does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.
5. This Bill proposes to make federal aid for medical care the rule rather than the exception.
6. The Wagner Health Bill does not recognize the

need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

7. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

8. While the Wagner Health Bill provides compensation for loss of wages during illness, it also proposes to provide complete medical service in addition to such compensation.

9. The Wagner Health Bill provides for supreme federal control; Federal agents are given authority to disapprove plans proposed by the individual states.

10. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for preventive and other medical services for which it proposes allotments of funds.

11. The Wagner Health Bill is inconsistent with the fundamental principles of medical care established by scientific medical experience and is therefore contrary to the best interests of the American people.

12. The fortunate health conditions which prevail in the United States cannot be dissociated from the prevailing standards and methods of medical practice.

13. No other profession and no other group have done more for the improvement of public health, the prevention of disease and the care of the sick than have the medical profession and the American Medical Association.

14. The American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the national health and well being. It must, therefore, speaking with professional competence, oppose the Wagner Health Bill.

15. The House of Delegates would urge the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the indigent and the medically indigent, with local determination of needs and local control of administration, within the philosophy of the American form of government and without damage to the quality of medical service.

16. The fundamental question is how and when a state should be given financial aid by the Federal government out of the resources of the states as a whole, pooled in the Federal Treasury.

17. The bizarre thinking which evolved the system of Federal subsidies—sometimes called “grants-in-aid”—is used to induce states to carry on activities suggested frequently in the first instance by officers and employees of the Federal government.

18. The use of Federal subsidies to accomplish such federally determined activities has invariably involved Federal control.

19. Any state in actual need for the prevention of



disease, the promotion of health and the care of the sick should be able to obtain such aid in a medical emergency without stimulating every other state to seek and to accept similar aid, and thus to have imposed on it the burden of Federal control.

20. The mechanism by which this end is to be accomplished, whether through a Federal agency to which any state in need of Federal financial assistance can apply, or through a new agency created for this purpose

or through responsible officers of existing Federal agencies, must be developed by the Executive and the Congress, who are charged with these duties.

21. Such a method would afford to every state an agency to which it might apply for Federal assistance without involving every other state in the Union or the entire government in the transaction.

22. Such a method would not disturb permanently the American concept of democratic government.

## ORIENTATION\*

WILLIAM J. MALLORY, M.D., *President of The Medical Society of the District of Columbia*

"...whereas it was the expectation of many, who wished not well unto our house... that men should have been in doubt which way they were to walk..."

Therefore,

"Ponder the path of thy feet and let all thy ways be established."

In times of confusion and stress, outcries are heard, questions asked, and slogans formed.

A man, on regaining his senses, asks, "Where am I?" And it may be significant that the first direct question our forefather heard was, "Adam, where art thou?"

So, at the present time, hearing many outcries expressive of much emotion, but conveying little thought, we may well ask ourselves some questions.

Son of Adam, where art thou? Disciple of Aesculapius, whither goest thou? Upon whom may you rely, in order that "your way may be established"?

Before attempting to answer these questions for ourselves, let us see what has been the experience of the human race, and what answer has been given by the seers.

That classic figure of all calamity and distress, Job, toward the end of his complaint, cried out:

"God hath delivered me to the ungodly and turned me over into the hands of the wicked."

He found neither remedy nor relief in the many words of his comforters, and said to them: "Ye are all physicians of no value."

But notice that restitution followed, when he heard and obeyed a voice out of the whirlwind of confusion, which said:

"Gird up now thy loins like a man.  
I will demand of thee..."

Twenty-five hundred years ago the Prince Gautama who "wept with all his brothers' tears" gave a similar answer, which all men must ultimately heed:

"Within yourselves deliverance must be sought.  
Each man his prison makes."

A modern seer, of our own tribe, Dr. William A. White, wrote: "Peace resides within; it is not dependent upon things without. It is the inner values that count most, and it is to their cultivation that civilization must turn."

So we learn from the most ancient folklore and the newest psychology that when man has sought orientation, has tried to know his position and face the light, he has been told to seek the light within and look to himself for help.

Let us do likewise.

Where art thou?

In space you are on familiar ground, surrounded by friendly, even though sometimes anxious faces.

In time, you are in what an old Lama called "maya," the age of illusion.

Therefore, mental orientation becomes essential to understanding and right action. This must be so because only when the organism is dead or the environment completely static will the need for decision and action pass away.

What are you in the modern scheme of things?

You will, no doubt, be relieved to be told that you are members of a learned profession.

Doctor (docere: to teach). Medicine (mederi: to remedy or heal). Learned men, skilled in a profession; so well versed in a department of knowledge as to be qualified to teach and practice, in this case, the healing art.

But you are told that a change has come over the spirit of men's sociological dreams and you in your old role of "healer" do not fit into the changed relations.

What is this change?

With increase of knowledge, exact observation, and

\* Presidential Address read before the Society, April 19, 1939.

use of precise technic, "medicine" is seeking and finding its place among the sciences, or more correctly, in science as a branch of biology, or the life science, and is now functioning in a domain as broad as thought and as long as the stream of life itself.

There is some truth in this. The vital relationship between the sciences and medicine will be recognized if we recall that the fundamental sciences, as they have been arranged serially (and more or less genetically), are: astronomy, physics, chemistry, biology, psychology, and sociology; but fundamental as these sciences may be, they cannot be kept or carried in separate baskets because they are found to overlap and interlock in every problem presented and in every activity of man.

Thus, for example, knowledge of astronomy is advanced by the methods of chemistry; and while biology alone would be a dark mystery, with chemistry it becomes a shining miracle, which man is beginning to understand.

This close relationship between all the sciences and medicine is shown by the fact that they all are required to explain the formation, composition, structure, and the physiological, pharmacological and therapeutic action of viosterol.

As seen in these relationships it therefore becomes logical and practical and that the doctor of medicine should consider science as one subject, with one discipline, but including many branches.

Biology is that branch of science to which medicine is bound by bonds of closest affinity, since medicine deals really with human biology or the science of human life.

Now, you know that time was when the available knowledge pertaining to the subject of medicine could be grasped completely and the technics, such as they were, mastered easily. Then, the sick man was the main problem and only when sick. Now all this is changed.

What are your activities now?

The doctor is requested to see that man is well bred, safely born, and happily reared. Man's food must be inspected and his diet balanced. He must be immunized against infection, protected against rickets, and other avitaminoses; his tonsils removed, his teeth replaced, and lenses fitted to his myopic eyes.

Just as the priest, in days of old, laid on his hands and called down the protection of the gods against evil agents and ill luck, so in modern time, this "manling" is inspected and "vetted" by the doctor at every critical period of his life—at birth, for school, college, gymnasium, marriage, employment, and retirement.

No reliable employer will hire him until his physical fitness is certified, lest he should have to pension a specimen of congenital, universal, physical and mental

inadequacy because a disability became manifest while working forty hours a week.

The hero may not even bleed for his country until inspected, immunized and passed, lest a prior disability "made worse in line of duty" should induce him to "bleed" his country throughout the remainder of a life made as long as it can possibly be extended by the doctor.

If a man drives on the wrong side of the street and is found thick of speech, the alcohol content of his blood may be determined to test his sobriety. If he is charged with the paternity of a child out of wedlock, examination of his blood must be made to furnish part of the evidence that establishes the fact.

If he slays his neighbor, he must be psychoanalyzed before it can be determined to what prison—I beg pardon—to what country club or Government institution of mental and moral rehabilitation he is to be assigned for medical treatment by a skilled staff who may or may not sterilize him.

This product of your hands should be so vigorous at the age of ninety-six that when he gazes on the daughters of Eve he should not have to make the vain wish that he were again only seventy; but might be able to give us a modern version of the lugubrious words of Job, and say: "Leave me not alone. I would live away. Why should I not think on a maid?"

A certain scientist implies that some grave international crises might be averted by closer collaboration between the endocrinologist and the urologist in attendance upon the elder statesmen with an enlarged prostate gland.

Bernard Shaw would even have man live to the age of Methusaleh and as a promising young man of three hundred years see the fruition or failure of many of his five-year plans and receive the deserved acclamation or damnation of his enthusiastic constituents.

And then, finally, when Azrael, that separator of companions, approaches with his veiled face, and the soul of man receives permission to depart, the doctor must certify to his own failure longer to extend life, admit that the man is dead, and specify whether from natural causes, or, perhaps, a mercy death in the interest of the heirs to his estate. He may then help to select the coffin, be a pallbearer and when musical, he has been asked to sing at the funeral.

So, my versatile and resourceful colleagues, you will perceive that when you are classified as members of a learned profession qualified as competent to teach and practice the healing art, your works are greatly underestimated.

What, then, are you?

You should know that things are never understood or controlled until they are given a new name; this has become obvious to all observers. I therefore give



you a new title, of Homoculturists, because, as has just been shown, you cultivate man from ovum to octogenarian.

It is hoped that there is strong magic in this name. It is needed, because the anthropologist does not find your works good, and no wonder, because the trinity of Prometheus, Hercules and Aesculapius could hardly finish the work that you are asked to do.

However, before letting the anthropologist tell you why he does not find your work good enough, let me explain in crude terms. There are two old philosophies abroad, in new guise: one is that of the perfect environment; the other is that of the perfected organism.

You have long been required to give service to one or the other of these, according to which was most popular in public opinion at a given time.

The effect of the first, namely, the perfect environment, may be illustrated by quoting incompletely from a parable by a modern prophet, recently dead:

This is the parable.

When Adam had been driven from the garden, came Eblis, the accursed, who had long prepared an evil stratagem and a hateful device against our pure forefather, being desirous of his damnation and anxious to multiply causes and occasions thereto.

So when time was that the chain of cause and effect should be surrendered to man's will, and the vessels of desire and intention entrusted to his intelligence, then came Eblis and said:

"My Lord, whom hast thou ever beheld in all thy world wiser and more excellent than thyself?"

Adam said: "I have never seen such an one."

Eblis asked: "Hast thou ever conceived of such an one?"

Adam answered: "Except in dreams, I have never conceived of such an one."

Eblis then answered: "Disregard dreams. They proceed from a superfluity of meat. Stretch out thy hand upon the world which thou hast made, and take possession."

So Adam took possession of the mountains, which he had leveled, and the rivers, which he had divided, and the upper and lower fires, which he had made to speak and work for him, and he named them as possessions for himself and his children forever. After this, Eblis asked:

"Who has given thee these profitable things?"

And Adam said: "By my hand and head I alone have given myself these things."

Eblis said: "Praise we the giver."

So Adam praised himself in a loud voice and built an altar and a mirror behind the altar, and he ceased not to adore himself in the mirror and extol himself daily before the altar, by the name and under the attributes of the Almighty.

It is recorded that for a hundred years he was continually upheld by the peacock (that bird of vanity) under the detestable power of Eblis, the stoned, who, by means of magic, multiplied the similitude of meat and drink and rich raiment about him for his pleasure, and came daily to worship him as God.

Further, in that age, his eyes were darkened and his mind made turbid and the faculty of laughter was removed from

him, so that he ceased to laugh and was made even with the ox and the camel.

So you see that traditionally this maker of a perfect environment came to a sad pass; the greatest of all curses fell upon him.

There is now many a son of Adam wearing silk underwear and an abdominal support, suffering from abdominal tympanites and vascular hypertension, multiplying the similitude of meat and drink, surrounded by Liliths, who sees nothing reflected in the mirror of his own making to provoke a laugh. With darkened vision and with turbid intellect he has become even as the camel and the ox.

The philosophy of the perfected organism may be illustrated by some words from the anthropologist, who says:

"The occasionally thinking and persistently well-intentioned members of the educated public are in greater danger of being led to ruin by emollient soothing-syrup adjusters of social institutions than by brutal dictators or fanatical proletarians.

"The most alarming symptom of our sick civilization is that the one searing human question which needs immediate answer is virtually never asked, namely, What is the matter with man?"

"All the social doctors are fussing with the irrelevant secondary symptoms of an undiagnosed human degeneracy—the breakdown of free institutions, the disruption of decent human relations, the inadequacy of economic systems.

"The future of mankind does not depend upon political or economic theory, nor yet upon measures of social amelioration, but upon the production of better minds in sounder bodies.

"Every jot and tittle of the vast mass of evidence which I have analyzed indicates that inferior biological status is inextricably associated with diminished intelligence and that the association of the two is mainly responsible for economic inadequacies and antisocial conduct.

"In medical science lies the only practical control of human evolution and biological progress.

"Medical science must cease to regard its function as primarily curative and preventive.

"It must rid itself of the obsession that its chief responsibility is to the individual rather than to society.

"It must allocate to itself the function of how the human animal may be improved as a biological organism."

Now, gentlemen, we have learned from the parable that the first man who perfected his environment assumed the attributes of the Almighty and was left by the devil who guided him, looking at his picture in a mirror of his own making, and seeing nothing in the reflection to induce a smile.

As an example of the philosophy of the perfected organism, the anthropologist depresses us with the thought of the task which he would have us perform, and we can see nothing in that picture, nor find anything in our imagination, to make us merry.



Doctors, my teachers, my pupils, my colleagues, fellow members of the profession: I have taken up your old portrait and attempted to retouch it, varnish it over, and put it into a new frame.

I have even given you a new title and called you some hard names, you can see for yourselves, with what poor success.

I seem to hear you saying to the people whom you serve,

"I have eaten your bread and salt.  
I have drunk your water and wine.  
The deaths ye died I have watched beside,  
And the lives ye led were mine."

Therefore I cannot quite make your picture look like that of a full-time veterinarian to a state-operated human stock farm, nor can I imagine you or your patients either human or happy in that frame.

Then, what have we now?

This: The same friendly visage looks out through the new frame with the same perspicuous eye, on the same old show. True, the stage is modernized, the names of the characters changed, and new costumes are worn.

It is an age-old play.

Still, as in the day of Elisha, son of Shaphat, there is the distraught king; still the servant stands at the door of the soothsayer and healer; advice is given; but Naaman is wrath and says: "Behold, I thought he (the healer) will surely come out to me, and stand, and call upon his God (gods of social amelioration, i.e., say the right words), and strike his hand over the place (stroke it up and down, smooth him down?) but he is only advised what to do—"and he goes away in a rage."

Still, the middle man, Gehazi, runs after the patient to take somewhat of him—a talent of silver and two changes of garment for two young men from Mount Ephraim.

In the modern revival of this old problem play, what role shall the doctor of medicine assume?

Why, that of a doctor, a soothsayer, truth-teller, and healer.

But be careful, lest you be bitten by the bug of reform or infected by the microorganism of service.

The anthropologist is not the only one who would have you remake man; aborn him a little lower than the angels; sterilize him if he is bad stock, and do him die in a mercy death when he is useless.

Be warned of your professional predecessors.

Be you witch-finder, Shaman, medicine man, doctor-of-medicine, or homoculturist, be modest, retiring and reticent.

Beware of how you tell the unsolicited truth to uninstructed strangers.

If you have read the books which you should have read in childhood, you will know that among primitive

and simple-hearted people, when the witch-doctor's influence waxed too great, when "his shadow grew longer than the king's," Chaka, King of the Ama-Zulu, cried out, "Take him away," and he was seen no more in one piece.

Being then what we are and where we are, we are at a stage where we must say, as the dough-boys did, "Where do we go from here?"

Let it be hoped that the answer will not be the one given by a resourceful private who, while retiring at a rapid rate, but in good order, to a position in the rear, was halted by an officer and asked, "Where are you going?" The answer was, "Cap'n, I ain't goin' nowhere. I'se comin' back."

No, we must not go back, but rather let us follow the advice of the Chinese sage, who said: "A wise man, when starting on a journey of a thousand miles, begins by taking one step in the right direction."

In order to go forward from our present position let us consider: What should our function be in the present scheme of things?

I suggest the following: If we may accept "medicine" and the works of a doctor of medicine as comprehending and dealing practically with human biology, or the science of human living, then two significant concepts emerge from this consideration:

The first is, biology is the fundamental science to which medicine is most directly dependent. It is the golden thread upon which the pearls of medical wisdom may be strung.

This is important because, then, widely diverse facts gathered from separate sources would become correlated under the fundamental science of biology.

And it follows from this that each highly specialized worker will contribute something to another domain of knowledge, and so pure science, so-called, will have an ever increasing utilitarian human value.

The second concept is, just as biology correlates isolated facts concerning man's life and constellates them about the fundamental science, so also will it tend to co-ordinate the aims and purposes of men engaged in very diverse types of work.

This coördination is much needed.

As already intimated under what is required of a doctor of medicine, knowledge has increased and technic become differentiated to such a degree that special functions are necessary and a specially trained personnel required for the application of this knowledge and technic to the needs of men.

Professor Hooton, the anthropologist, has stated: "I believe that the application of biological science to man is the single means of salvation of our species."

And Charles W. Eliot, chemist, college president and educator, is quoted as saying: "The human race has more and greater benefits to expect from the successful

cultivation of the sciences which deal with living things than from all other sciences put together."

Now, let us see where medicine stands in this scheme of things.

Some of the special departments of human biology already established and functioning in medicine, but not well coördinated, are: eugenics, gynecology, obstetrics, pediatrics, immunology, preventive medicine, industrial medicine, military medicine, psychology, psychiatry, forensic medicine, and sociology.

Practice of medicine, with all its subdivisions under physicians and surgeons, now and always will mean the responsible doctor's dealings with the individual patient who has voluntarily chosen him as his medical adviser.

The major objective of the organized profession of medicine is to make "the practitioner of medicine" the competent correlator and integrator of all the diverse knowledge and technics available to the needs of the individual patient under his care.

Here is presented the problem of modern medicine.

Let me now elaborate, further, this problem.

It is a fundamental principle that growth has caused and will inevitably continue to cause differentiation; and specialization of function goes hand in hand with differentiation.

With the medical sciences this may come to involve apparent differences of goal.

This is even now, to a certain degree, manifest between the diverse specialities in the practice of medicine, that is, between the general practitioner and the so-called specialist, and between both kinds of specialist and other various types, such as public health officers and institution officials.

This is a disintegrative tendency, and is bad.

Each one of these peculiar and divergent disciplines, if followed intently and narrowly, will develop in its followers special points of view and only a partial appreciation of the whole truth in all its aspects; and this, in turn, will lead to special personal and group interests.

Therefore, unless these seemingly diverse interests are comprehended as part of a whole and coördinated under a major discipline, where latitude will be allowed for meeting the varying requirements in each field of endeavor, they will lead to diverging personal aims, methods and purpose.

Then, instead of coördination and coöperation under human biology, or life science, we will have the conflict and confusion of overlapping material interests, as is found in industrial business and trade practice.

We would then have quantity production by technicians in some domains, with regimentation of workers and patients and many other worse things, that stick to quantity production in practice.

There would be left the remnant of a profession with increasingly divergent views and purpose.

Is there a remedy?

Yes. Such undesirable social result can be averted: How? By further developing the scientific method of thought and by assuming the professional attitude in action toward old problems renamed and new problems unnumbered.

This the organized profession of medicine is trying to do, and is doing with much feeling, but sometimes without complete comprehension of purpose or clear definition of the methods to be employed in its accomplishment.

At this stage in our thought, let us remember that the Medical Society is not a citizens' association, a trade guild, nor yet a privileged or underprivileged minority, seeking peculiar advantage from society and the state.

It is an association of experts, trained and experienced in matters concerning health and disease.

But the doctor of medicine is also a citizen and a taxpayer and, at times, must function in that role, and with other citizens perform equal duty in determining the social and economic condition under which they mutually will work and live.

The doctor will ultimately share with his fellow citizens the good and the bad effects of any readjustment of social and economic relations.

If he were simply selfish he would not be alarmed by unwise proposals, because he as a doctor will suffer less than they will from bad medical economics.

What the profession of medicine has contributed to public good and social guidance need not be mentioned by a doctor. But it should be emphasized that the profession and the doctor, at least, have not been a liability to society or the state.

Furthermore, such imperfect but increasing good in the domain of health as we all enjoy has developed under the guiding ethics established and maintained by practitioners of a profession and not under the rules of a trade guild or regulations for technical employees.

This advancement, which is unequaled in any country in the whole world, will continue if the profession is not hindered, by being deprived of its initiative, responsibility and inspiration, as it has been in some places, by being prostituted to the propagation of false philosophy and the promotion of primitive, selfish, political aims.

Therefore, the Medical Association, being what it is, namely, an organization of experts, trained, skilled and experienced in matters pertaining to health and disease, the function of this association and its members, as such, is now and should continue to be primarily and essentially informative and advisory.

Let the voice of the doctor of medicine, when speaking as such, state his considered professional opinion concerning matters pertaining to individual and collective human health and mental welfare.



So will his information be considered valid, and his advice accepted as unprejudiced.

Then shall his "way be established."

"Ask for the old path, where is the good way, and walk therein, and ye shall find rest for your souls."

## NEWS AND PERSONALS

A Convention for the Revision of the Pharmacopoeia will be held in Washington, D. C., May 14, 1940, according to an announcement issued by the president of the United States Pharmacopoeial Convention, Dr. Walter A. Bastedo.

The Convention will decide the principles under which the Pharmacopoeia is to undergo revision. It will also elect the officers of the Convention, a Board of Trustees to manage administrative, legal and financial matters, and a Committee of Revision, all to serve until the next Revision Convention meets. The Medical Society has been asked to appoint representatives to the Convention.

The American Congress of Physical Therapy will hold its 18th Annual Scientific and Clinical Session at the Hotel Pennsylvania, New York City, September 5-8, 1939. Preceding the Session the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians (August 30-September 2, 1939). Registration for the seminar is limited to 100 and is by application only. Information concerning both the seminar and the convention proper may be obtained by addressing the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

The University of Wisconsin Medical School is to conduct an Institute for the Consideration of the Blood and Blood-forming Organs, September 4-6, 1939. The program is to include papers and round-table discussions by European and American workers in the field of hematology. A detailed program may be obtained by addressing Dr. Ovid O. Meyer, Chairman of Program Committee, University of Wisconsin Medical School, Madison, Wisconsin.

The Ninetieth Annual Session of the American Medical Association, held in St. Louis, Missouri, May 15-19, 1939, was attended by many members of The Medical Society of the District of Columbia. The Society was also well represented by par-

ticipants in the scientific meetings. On Wednesday, May 17, before the Section on Pediatrics, Dr. Harry H. Donnally presented a paper on "Smallpox Vaccination of Infants: Revaccinations after Two to Three Years in Children Primarily Vaccinated with Culture Virus (Rivers), Compared with Those Primarily Vaccinated with Calf Lymph Virus." The discussion was opened by Dr. James P. Leake.

Thursday morning, May 18, Dr. William P. Herbst, Jr., Chairman of the Section on Urology, gave his Chairman's Address before the Section on the subject, "Renal Tuberculosis; a Community Problem." The same morning, Drs. Jacob Kotz and Morton S. Kaufman presented a paper on "The Effects of Obstetric Analgesia on the Newborn Infant" to the Section on Obstetrics and Gynecology.

Dr. Joseph Kreiselman was among the anesthesiologists to take part in the demonstration which was a feature of the special exhibit on anesthesia.

Among the registrants at the Convention, the following names were noted:

Harry S. Bernton  
Edward Warren Burch  
Charles P. Cake  
Arthur C. Christie  
William Earl Clark  
James Roger Costello  
Alva D. Daughton  
William DeKleine  
George Dewey  
Samuel M. Dodek  
Harry H. Donnally  
Joseph F. Elward  
Walter Freeman  
Louis S. Greene  
Raymond L. Gregory

William P. Herbst, Jr.  
Edward Lee Howes  
Oscar B. Hunter  
Elizabeth Kittredge  
Thomas S. Lee  
Henry C. Macatee  
Claude William Mitchell  
Claude Moore  
Edward W. Nicklas  
Margaret Mary Nicholson  
J. Winthrop Peabody  
William P. Reeves  
Sanford M. Rosenthal  
James E. Wissler  
Mr. Theodore Wiprud

The American Board of Obstetrics and Gynecology, at its meeting May 17, 1939, in St. Louis, announced among its successful candidates to become diplomates of the Board the following members of The Medical Society of the District of Columbia:

Radford Brown, James R. Costello, William J. Cusack, Samuel M. Dodek, W. Preston Haynes and Herbert P. Ramsey.

The American Public Health Association has recently prepared five reports dealing with educational qualifications of public health statisticians, school health educators, public health engineers, sanitarians, and sub-professional field personnel in



sanitation. These reports may be secured free of charge from the Book Service, American Public Health Association, 50 West 50th Street, New York City.

**The Fourth Annual Alumni Extension Course of the Georgetown University School of Medicine** was held June 1-3, 1939, during the sesquicentennial sessions of Georgetown University. The principal lecturers were Surgeon General Thomas Parran of the United States Public Health Service and Dr. Irvin Abell, past president of the American Medical Association.

Dr. Parran, a Georgetown graduate of 1912, spoke on "Medicine in a Changing World" at the first session. At a special session held June 3, Dr. Abell lectured on the subject, "Diverticulosis and Diverticulitis of the Intestinal Tract." Dr. Abell, Clinical Professor of Surgery at the University of Louisville Medical School, received an honorary degree from the University at the sesquicentennial convocation which followed his lecture.

Other prominent members of the medical profession who participated in the meetings were Dr. Russell L. Haden of Cleveland, Dr. Louis H. Clerf of Philadelphia, Dr. John A. Kolmer and Dr. Anthony M. Sindoni, Jr., of Philadelphia, Dr. Nicholson J. Eastman and Dr. Walter E. Dandy of Baltimore, and Dr. Carlos F. Sacasa of Rochester, Minn.

Clinics were conducted at Georgetown University Hospital during the three-day program by members of the staff.

**The Syphilis Journal Club of Washington** was organized May 26 by 35 physicians engaged in the field of syphilology. The initial meeting was held at the home of Dr. George W. Creswell, who was responsible for the organization of the Club. Two papers were presented at this meeting, "Arsenoxide: Its Comparison with the Arsphenamines" by Dr. George B. Roth and "Quartan Malaria Therapy in the Treatment of Neurosyphilis in Negroes" by Dr. Theodore C. C. Fong.

The following officers were elected:

Dr. William H. Hough, *Chairman*; Dr. Norvell Belt, *Vice Chairman*; Dr. George W. Creswell, *Secretary-Treasurer*.

Members of the advisory board are:

Dr. H. H. Hazen, *Chairman*, President of the District of Columbia Social Hygiene Society; Dr. W. A. Bloedorn,

Dean of George Washington University School of Medicine; Ray H. Everett, Executive Secretary of the Social Hygiene Society; Dr. William H. Hough, Chief of the Department of Syphilology, Garfield Memorial Hospital; Dr. William J. Mallory, President of The Medical Society of the District of Columbia; Dr. Winfred Overholser, Superintendent of St. Elizabeths Hospital; Dr. George B. Roth, Professor of the Department of Pharmacology, George Washington University School of Medicine; Dr. George C. Ruhland, District Health Officer, and Dr. Raymond A. Vonderlehr, Assistant Surgeon General in Charge of the Division of Venereal Diseases, U. S. Public Health Service.

The Club's membership, it was announced, draws from all sources concerned with the control and treatment of syphilis—private practitioners, clinic physicians and technicians, public health officials, social workers, and representatives of lay groups concerned with social hygiene. Meetings are to be held quarterly, with papers to be presented on the latest developments in research and social control problems. It is expected that the Club will present a symposium before the District Medical Society. The next meeting will be held in September.

**The Annual Convention of the District of Columbia Pharmaceutical Association** was held June 7 and 8 at the Wardman Park Hotel. Drs. Maurice Protas, Harry F. Dowling, and Paul F. Dickens were among those who presented papers at the meetings.

**The George Washington University Medical Society** held its annual business meeting May 20, at which time Dr. Oscar B. Hunter, President, delivered his annual address on the subject, "A History of the George Washington University Medical Society and Its Relationship to the School of Medicine."

The following officers were elected for the coming year:

Dr. Arnold McNitt, *President*; Dr. William B. King, *Vice President*; Dr. Leslie French, *Secretary*; Dr. Burton Glenn, *Treasurer*.

**The Section on Pathology and Laboratory Medicine** has elected the following officers for the coming year:

Dr. Oscar B. Hunter, *Chairman*; Dr. Tomas Cajigas, *Vice Chairman*; Dr. Lester Neuman, *Secretary-Treasurer*.

**The Section on Gastroenterology** held its last meeting of the year April 10, at which time "Advances in Gastroenterology During the Past Year—

A Review of the Literature with Comments" was discussed by the following participants in the program: Drs. Robert Sterling McGrath, Oscar B. Hunter, Arthur C. Christie, Joseph P. Shearer, and William T. Gill, Jr.

The following officers were elected for the coming year:

Dr. John A. Reed, *Chairman*; Dr. Alan F. Kreglow, *Vice Chairman*; Dr. Robert Sterling McGrath, *Secretary-Treasurer*.

Appointments of 22 representatives of the Society to the corporation of **Group Hospitalization, Inc.**, were confirmed at a meeting of the Society on May 3. The complete list is as follows: Drs. W. M. Ballinger, Joseph B. Bogan, Caryl Burbank, Tomas Cajigas, William W. Chase, Arthur C. Christie, Lewis C. Ecker, William T. Gill, Jr., Raymond T. Holden, R. Arthur Hooe, LeRoy W. Hyde, Russel J. Jansen, Richard A. Kearny, Leon A. Martel, H. J. Russell McNitt, Howard P. Parker, Philip O. Pelland, Alec A. Preece, F. A. Reuter, E. Kirby Smith, J. Russell Verbrycke, Jr., and John D. Wynkoop. Because of the removal of Dr. E. Kirby Smith to Tennessee, Dr. John F. Preston has been appointed his successor.

Appointments to the newly created **Committee on Automobile Accidents** are as follows: Dr. W. Warren Sager, *Chairman*; Drs. E. Leonard Goodman, Paul J. O'Donnell, Morris I. Bierman, Herbert S. Gates.

**Dr. Russell Fields** and **Dr. Richard E. deButts** were appointed by the Executive Board on May 29 to represent the Society on the **Health Committee of the Washington Council of Social Agencies**. This was a reappointment for Dr. Fields, who has served for several years.

**Dr. Thomas E. Mattingly** has been appointed by the Executive Board to represent the Society on the **Advisory Board of the Washington Self-Help Exchange** for the year beginning May, 1939.

**Dr. Morris Fishbein**, Editor of the Journal of the American Medical Association, spoke at the Wardman Park Hotel May 24 before more than 300 delegates at the 37th Annual Convention of the **American Surgical Trade Association**.

**Dr. Jennings C. Litzenberg** of the medical faculty of the University of Minnesota, who delivered the Smith-Reed-Russell lecture on the subject, "The Relationship between the Pathology and Symptomatology of Ectopic Pregnancy," at the **George Washington University School of Medicine** May 25, was guest of honor at a luncheon given by Dr. Howard F. Kane at the Cosmos Club following the lecture.

**Dr. Francis X. McGovern** spoke May 23 on "Problems Confronting Medicine" at the **Convention of the Guild of Prescription Opticians**, which was held in Atlantic City, New Jersey, May 22-24, 1939.

**Dr. Everett M. Ellison**, President of the **United Dry Forces**, spoke at a meeting of the **Allied Organizations of the District of Columbia, Inc.**, held in the Grafton Hotel May 20. The meeting was in observation of the 53rd anniversary of the adoption of a law which requires teaching the effects of alcohol and narcotics in the local public schools.

**Dr. Elmer Klein** was appointed June 2 by the District Court to the **Commission on Mental Health** to succeed Dr. Loren B. T. Johnson, who resigned. Dr. Bernard S. French, whose term had expired, was reappointed. Both will serve for four years, beginning June 10. The Commission was established a year ago to provide for the handling of insanity proceedings by experts.

**Dr. Walter A. Wells** and **Dr. Richard L. DeSaussure** have been appointed by the Board of Education to serve on a special committee to formulate a program for teaching hard of hearing in the public schools. Other members of the committee are Miss Betty Wright, *Chairman*, Executive Secretary of the American Association for the Hard of Hearing, and Robert L. Haycock, Assistant Superintendent of Public Schools.

**Dr. Luther H. Reichelderfer** was reelected trustee to the Board of **George Washington University** at a meeting held there June 1.

**Dr. Francis I. Bloise** has been elected president of the **Alexandria Medical Society** for 1939-40.

# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

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### ACUTE PYURIA IN CHILDREN\*

HUGH J. DAVIS, M.D., F.A.A.P., *Professor of Clinical Pediatrics, Georgetown University School of Medicine*

Acute infections of the urinary tract during childhood are far from rare. They constitute one of the most common infections of infancy leaving out of account those of the upper respiratory tract. The condition is manifested by the presence of pus and bacteria in the urine which may come from any part of the urinary tract, and the term pyelitis has come to be applied generally to such infections in infancy and childhood.

Pyelitis is most frequently encountered from the third to the eighteenth month of life, a period corresponding closely to the diaper age, the infection often being related to fecal contamination of the external genitalia.

Observers report that during the first two years of life it is four to six times as common among girls as among boys. After the age of 2 years it is three times as common among girls.

Among newborn infants pyelitis is found more often in boys. In one report of 15 neonatal cases the preponderance of males over females was 13 to 2 cases.

The infecting organisms in almost 80 per cent of the cases have been found to be Gram-negative bacilli of the colon-aerogenes group and in 15 per cent streptococci and staphylococci. The *Bacillus proteus*, the *pneumococcus* Fried-

länder's bacillus, *Bacillus pyocyaneus* and the gonococcus have been noted as the causal agents. Sterile forms of pyuria when cultures are made on ordinary media usually are tuberculous.

There is an increased incidence of cases of pyelitis during the period of gastrointestinal diseases in the summer months and also during the winter months when upper respiratory infections are most current. The so-called "bacterial readiness" advanced by some workers to account for the development of pyelitis may be the result of these gastrointestinal and respiratory diseases or other diseases which lower the resistance.

It is generally accepted that the modes of infection are hematogenous and ascending. When acute urinary infection is due to the coccal type of organism there can be no doubt that practically always the mode of infection is by the hematogenous route. Pyelitis due to staphylococci is seen secondary to similar infection of the skin, glands, bones, tissue around ingrowing toenails, etc.

Controversy has waged for years as to whether ascending infection of the urinary tract by bacilli of the colon-aerogenes group takes place. The question has not yet been settled. Holzman states that the theory of an ascending infection has been abandoned. However, the experimental work of Beeler and Helmholtz tends to estab-

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\* Read before the Society, January 18, 1939.



lish that mode of infection. Also, when the factor of stasis is introduced it is easy to see how ascending infection occurs, and similarly the existence of ureteral reflux strongly supports the theory of ascending route of infection. Furthermore, in support of the view that infection is ascending is the frequency of such infections during the diaper age in the female. The constant contamination with feces of the female makes the ascent of the colon bacillus through the short urethra to the bladder seem relatively easy.

A most important factor in any case of pyelitis is obstruction of the urinary tract. Stasis occurs in many children due frequently to congenital anomalies of the urinary tract which occur among at least 5 per cent of all infants. Stasis may also be due to inflammatory stricture, and to a stone anywhere in the urinary tract.

The onset of acute urinary infections in infancy is sudden, with high fever, restlessness and pallor. Occasionally a chill may occur, indicating that the infection is very severe. When it is secondary to an infection elsewhere in the body the onset may give rise to increase of the fever and to increased signs of toxemia already present, or it may only be discovered by repeated examinations of the urine.

At times the symptoms are extremely severe, resembling a toxic condition or meningeal irritation due to extensive involvement of the kidneys. There will be marked pallor, nausea and vomiting, stupor and perhaps convulsions. When the rather limited number of signs and symptoms are present in a patient under two years and after careful physical examination with completely negative findings, a presumptive diagnosis of infection of the urinary tract is warranted. Physical examination in the usual case gives negative results but there are certain signs and symptoms that should be looked for in every case. These are:

1. Tenderness below the ribs posteriorly.
2. An increase in the size of the kidney.
3. Suprapubic pyriform swelling.
4. Only a minute opening in the prepuce or in the meatus of the glans penis.

## 5. Edema.

In the case of an older child local symptoms, such as painful urination, frequency, tenesmus and pain in the bladder or tenderness over the kidneys may occur, but even at this age they are not always present. The onset after infancy may be as sudden as that of pneumonia or as gradual as that of typhoid fever.

Dr. James M. Moser, a member of this Society, in discussing recently in the *Virginia Medical Monthly* the chronic or recurrent type of pyelitis which is more often seen in the older child, states that there is a more varied symptomatology than in infancy. As he puts it, such a child is underweight, will not eat, is restless at night, has vague rises of temperature, an occasional headache, wets the bed, and is very irritable around the house and unfriendly with his playmates. He has a secondary anemia and frequently the pale, sallow complexion which has been dubbed 'pyelitis pallor.' Intensive examinations show no demonstrable cause for it all until one finds, if one is lucky, after frequent persevering urinary examinations, a pyuria.

The temperature curve in acute pyuria most commonly is of the irregular septic type ranging from subnormal to as high as 105° and 106°F. The plateau type may occur. Stoppage of a ureter may cause a sudden rise in temperature or a return of fever. As evidence of such obstruction it has been noted by numerous observers that during high elevations of temperature the amount of pus in the urine is greatly diminished if not entirely absent.

When the blood is examined in acute cases the concentration of the hemoglobin usually is not as markedly reduced as the great pallor would lead one to expect. The erythrocytes and hemoglobin are moderately reduced in the chronic cases. Leukocytosis is usually moderate, the differential count revealing only a slight increase in the number of polymorphonuclear cells.

Too much emphasis cannot be placed upon the care that must be employed in the collection and examination of the urine. Only provisional diagnosis of pyelitis should be made from the

finding of pus and bacteria in a specimen of urine obtained in the usual way. The presence of pus must be checked by catheterization if the patient is a girl, and if the patient is a boy a specimen of urine must be obtained after the prepuce and meatus have been cleansed. The finding of pus and bacteria in urine obtained in this way indicates the presence of an infection in the bladder or upper portion of the urinary tract. On the other hand, mistaken diagnoses have been made too many times when the above technic has been omitted in collecting urine for an examination. Many a so-called case of pyelitis is nothing more than mild vulvovaginitis. These are cases in which recovery is reported with any sort of treatment or no treatment at all.

Examination of the urine for pus must be made with a well-shaken specimen. Urine that is allowed to settle, or a centrifuged specimen, naturally will contain many pus cells, and a report of the number on this basis has no doubt frequently led to a false diagnosis of urinary infection. Normal urine of the male contains 2 to 3 pus cells per low-power field and that of females 6 to 8 pus cells. In pyuria the number of pus cells is usually extremely large, and they may be separate or in small or large clumps. If there is renal involvement there are usually leukocytic casts. Red blood cells are occasionally present, and usually there is a considerable amount of mucus.

Helmholz has recently stated: "If urinary infection is present it is important to know what type or types of bacteria are causing it. There are two procedures by which this information can be ascertained: (1) staining the sediment of the centrifuged urine with Gram's stain, and (2) a culture of the urine. By the former method it is possible to determine whether the infection is the result of gram-negative bacilli, cocci, or a combination of the two. By means of cultures one may differentiate the various gram-negative bacilli and *Streptococcus faecalis*, and one may distinguish the other forms of cocci."

Such symptoms as exist in acute pyuria are so indefinite that they are of little value in a differential diagnosis. Only very exceptionally

is local pain in the region of the bladder or kidneys a symptom. Any conditions in which the predominant symptom is fever must be differentiated. Characteristic laboratory and physical findings enable one to rule them out. Moser calls attention to exanthem subitum as perhaps the most frequent disease that presents a similar picture in infancy and therefore the most difficult to differentiate. Exanthem subitum, manifested by high fever and practically negative physical signs at the onset, makes differentiation difficult. The characteristic rash on the third or fourth day and leukopenia in this disease as contrasted to leukocytosis and the discovery of pus and bacteria in the urine in pyelitis separate the two diseases.

To determine whether the urinary infection has been overcome the urine must be repeatedly cultured. Only when cultures are sterile can a cure be said to have been effected. When there is persistence of infection every effort should be made to determine the exact site of the infection. In addition to the diagnostic procedures already enumerated a roentgenogram of the kidneys, ureters, and bladder should be made; determinations of phenolsulphonphthalein excretion and of concentration of blood urea should be made to determine renal function. Further study should be made by the urologist, and complete coöperation of the pediatricist and urologist is most important.

The course of pyelitis depends upon the nutritional state of the patient, the type of infection, the extent of renal involvement, and the presence of stasis in the urinary tract.

An acute attack of pyelitis is a matter of weeks rather than days; the fever lasts from one to three weeks, but there may be signs of infection long after symptoms disappear. As long as bacteria remain in the urine there may be a recrudescence. If culture of the urine is sterile, recurrences are rare.

Mortality among poorly nourished patients is reported as 20 per cent in hospitals and from 2 to 5 per cent in private practice, depending upon the type of infection and the presence of obstruction.



In treating pyelitis let us remember that many cases are undoubtedly self-limited. It is that type of case that clears up readily under any form of treatment. Other cases require employment of all approved therapeutic measures.

First, administration of fluids is of great importance in order to flush the urinary tract as well as reduce the toxic effects of the infection. Fluids are best given by mouth, and plain water serves the purpose best. If given only in teaspoonful quantities but at frequent intervals, surprisingly large amounts of fluids can be given in a day. When fluids are refused or vomited it will be necessary to use the retention enema, 3 to 6 ounces every 4 to 6 hours. If there is diarrhea or intolerance develops, fluids will have to be given subcutaneously or intravenously.

Nutritional requirements of the child should be met by as full a diet as possible. This is difficult since the appetite is usually poor. Special conditions such as diarrhea will have to be combated by use of lactic acid or protein milk. Indeed, the feeding of an infant with pyelitis frequently becomes quite a problem.

A pH as acid as 5.0 or as alkaline as 9.0 has been shown to be necessary to affect bacterial growth in urine. Alkalinity beyond pH 8.4 practically never is obtained. Alkalinization of the urine in cases of acute pyelitis nevertheless has become established due probably to its diuretic action or its effect on tissues. The dose 5 to  $7\frac{1}{2}$  grains of sodium bicarbonate and the same amount of sodium citrate 4 times a day for an infant and double that dose for an older child is adequate.

Acidification is more readily obtained. By the use of  $7\frac{1}{2}$  grains of calcium or ammonium chloride 4 times a day an acidity of the urine as low as pH 4.8 can be achieved which will inhibit definitely the growth of certain organisms. It is the established practice to add urotropin in a dosage of 3 grains 4 times a day after 24 hours of acidification by use of calcium or ammonium chloride.

It is well known that the acidification and alkalinization of the urine can be affected by the diet. This led a few years ago to introduc-

tion of the ketogenic diet as a means of sterilization of the urine. By the production in patients on that diet of beta-hydroxybutyric acid in a concentration of more than 0.5 per cent in a urine of pH 5.5 or less, growth of colon bacilli will be prevented and they will be destroyed. Other organisms found in urinary infections are killed at the same levels of concentration and pH; among these are *Aerobacter aerogenes*, *Proteus ammoniae*, pseudomonas, staphylococci, micrococci and *Streptococcus faecalis*. The concentration of beta-hydroxybutyric acid necessary to produce a bactericidal urine presupposes the presence of kidneys that are not too badly injured to secrete this acid and to yield a urine of low pH. For a successful ketogenic diet the food must be accurately weighed. The diet is figured on a basis of about 50 calories, 1 Gm. of protein and 10 Gm. of carbohydrate per Kg. of body weight, the balance being made up of fat. It is advisable not to continue the diet for more than ten days; if results have not been achieved, a normal diet may be resumed for a while and the procedure repeated.

Mandelic acid has been introduced recently, its action being similar to the beta-hydroxybutyric acid of the ketogenic diet. At a concentration of 0.5 per cent or more and at a pH range of from 5.0 to 5.5 it is bactericidal for organisms of colon-aerogenes group as well as for those of the coccus group.

Mandelic acid is administered as the elixir of ammonium mandelate or as calcium mandelate by mouth, or as ammonium mandelate in suppositories. It is advisable to continue the administration of the drug for five or six days after the urine has been rendered sterile, so as to kill the organisms which may be present in the various layers of the mucous membranes, and then to discontinue the medication. After an interval of 4 days cultures should be taken again to make sure that the urine has remained sterile.

The advantages of such oral medication over a rigid diet as is necessary to produce ketosis are too obvious to dwell upon. Mandelic acid, however, cannot be given in the acute stage, is not entirely free of toxicity, and will not be of



value where there is kidney damage. Herrold, Moser and others sound a note of warning as to use of this drug.

Recently Helmholz, Erickson, Gillett, Cook and Buehtel, Boyd, Villani, Herrold, Long and Bliss and others have brought attention to a new line of therapy in the use of sulfanilamide. This drug has a number of very definite advantages over mandelic acid:

1. It can be given in the acute stage.
2. Its bactericidal effect is not entirely dependent on reaction of the urine, although it acts better in alkaline urine than it does in acid urine.

3. It is excreted in bactericidal quantities by kidneys that are so severely injured that the concentration of urea is from 75 to 100 mg. per hundred c.c. of blood.

The administration of sulfanilamide does not offer any special difficulties. It is taken readily by infants and older children by mouth, and when it is not tolerated because of gastric irritability it can be given subcutaneously or intravenously. Its use in acute stages of the infection, especially in infancy, is a definite advance over the previous use of only diuresis and alkalinization.

Sulfanilamide is given in two-thirds the usual dosage for streptococcal infection, that is, 10 grains for each 20 lbs. of body weight daily. This is divided into 4 to 6 doses. Sodium bicarbonate is given in accompanying doses of from 30 to 60 grains a day. Water is usually given in the usual quantities, but intake of fluids can be restricted if the concentration of sulfanilamide in the urine remains low. A concentration of 50 mg. of the drug in its free form in 100 c.c. of urine is generally secured with this dosage. After the urine has become sterile it is essential to keep it so for a period of from 4 to 6 days and then discontinue the medication. After an interval of four days cultures are again taken to make sure that the urine has remained sterile.

Objections have been raised by Moser and others to the use of this drug in infancy and childhood on account of its toxicity. The danger of cyanosis, skin rashes, hemolytic anemia and agranulocytosis have been pointed out. A rise

in temperature which may occur from use of the drug may also confuse the results. Long warns that sulfanilamide should not be used in urinary tract infections unless the patient has been thoroughly studied as to renal function, possible anatomic or pathologic abnormalities of the urinary tract and the type of infecting organism.

Sulfanilamide is of no value in cases in which urinary tract infection is due to *Streptococcus faecalis*. When that is the infecting organism one must turn to mandelic acid or the ketogenic diet. With the use of the ketogenic diet, mandelic acid or sulfanilamide, it now appears

TABLE 1

*Number of Cases of Pyelitis and Pyelonephritis at the Children's Hospital During the Past 5 Years*

|                                                  |    |
|--------------------------------------------------|----|
| Medically treated . . . . .                      | 51 |
| Non-Medical cases . . . . .                      |    |
| A. Requiring surgical intervention . . . . .     | 7  |
| B. Not responding to any treatment . . . . .     | 5  |
| Cases with insufficient data on charts . . . . . | 7  |
| Total . . . . .                                  | 70 |

TABLE 2

*Sex and Age Incidence*

| HOSPITAL                               | BEDS | TOTAL<br>CASES | FEMALE | MALE | ACUTE | CHRONIC | 1 YR. | 1-4 YRS. | 4-13 YRS. |
|----------------------------------------|------|----------------|--------|------|-------|---------|-------|----------|-----------|
| Children's,<br>D. C. . . . .           | 110  | 51             | 47     | 4    | 33    | 18      | 15    | 23       | 13        |
| Royal Alexan-<br>dra, Austral. . . . . | 120  | 64             | 54     | 10   | 35    | 29      | 9     | 21       | 34        |

(25 cases or 50 per cent were 2 years or under at Children's Hospital.)

possible to clear up every type of infection that may be met in the urinary tract.

It is essential, however, that an excretory urogram be made in every persistent case of urinary infection. Only in this manner is it possible to discover the presence of urinary stasis before the kidneys have been seriously damaged. Caulk, Summerfeldt and Brown and others recommend pyelography and ureteral catheterization early with drug therapy.

The necessity of clearing up all extra-urinary foci of infection must be borne in mind in all cases of secondary pyelitis. Infections in teeth,

tonsils and ears are among the offenders, as are also paronychia and osteomyelitis.

Tables 1, 2, 3 and 4 present the experience with

pyelitis at the Children's Hospital during the past five years.

SUMMARY

Acute pyuria diagnosed by proper collection and examination of urine may still be safely treated by alkalization or acidification or the so-called alternating treatment. Many cases being self-limited will require no other treatment. Cultures of the urine should be made early in severe or persistent cases. When the type of infection has been determined appropriate treatment with either sulfanilamide, mandelic acid or ketogenic diet should be started with proper attention to renal function. Treatment or observation should be continued until sterile cultures of the urine have been returned repeatedly. Pyelograms should be made to determine whether there is any obstruction. The indicated urologic treatment must be started when obstruction is present.

TABLE 3

Treatment at Children's Hospital

|                           | TOTAL | NO. RE-<br>COVERED | NO. IM-<br>PROVED | NO. UN-<br>IMPROVED |
|---------------------------|-------|--------------------|-------------------|---------------------|
| Alkaline.....             | 30    | 4                  | 18                | 8                   |
| Urotropin and Acidity.... | 4     | 1                  | 2                 | 1                   |
| Alternating Treatment.... | 5     |                    | 2                 | 3                   |
| Mandelic Acid.....        | 3     |                    | 2                 | 1                   |
| Sulfanilamide.....        | 5     | 1                  | 4                 |                     |
| No Medication.....        | 4     |                    | 2                 | 2                   |

TABLE 4

Findings at Discharge

| URINE<br>CULTURE |                                  | AMOUNT OF PUS |        |       | CONDITION |          |                 | FEVER   |      |
|------------------|----------------------------------|---------------|--------|-------|-----------|----------|-----------------|---------|------|
| B. Coli          | None<br>Taken<br>or No<br>Growth | None          | Slight | Large | Recovered | Improved | Unim-<br>proved | Present | None |
| 5                | 46                               | 6             | 31     | 14    | 6         | 30       | 15              | 8       | 43   |

ABSTRACT OF PAPER READ BEFORE THE SECTION ON NEUROLOGY AND PSYCHIATRY OF THE SOCIETY, JANUARY 5, 1939

"THE INFLUENCE OF THE ANTERIOR PITUITARY GLAND UPON BRAIN BODY RELATIONS," H. S. Rubinstein, M.D., Baltimore.

The differences in brain weight according to sex and body size have led to questions concerning the influence of the sex and growth hormones upon these relations. Using the white rat (*Mus norvegicus-var. albus*), experiments were conducted with the use of extracts rich in sex factor of the pituitary gland, the follicle-stimulating hormone of menopausal urine, and the growth factor.

Forty male animals were used in the sex hormone study. These were divided into two groups according to age. Group 1 included animals younger than 75 days of age and group 2 consisted of older animals. The test animals received 10 daily (except Sunday) injections of pituitary extract rich in sex hormone, at the end of which time because of obvious genital hyperplasia they and their controls were sacrificed. Somatic, genital and brain studies were carried out.

Forty other animals were chosen for the study of the effect of the follicle-stimulating factor. This hormone was included because its source is believed to be the pituitary gland. Injections were given in a similar way to those mentioned above. At the end of ten days these animals were sacrificed and somatic, and genital and brain studies were likewise made.

Eighty-seven animals were used for the studies with the growth hormone. Seventy-four of these were divided into 3 subgroups. One of these received daily (except Sunday) intraperitoneal injections of an extract rich in growth factor;

the second subgroup received similar injections of a meat extract, and the third remained uninjected. The two latter subgroups were considered controls. After 22 weeks of treatment all animals were sacrificed and studied. The 13 other animals used in these growth studies were also divided into 3 subgroups, each of which was treated in a manner corresponding to the respective subgroup of the major growth experiment. The brains taken from these animals were used for water and solid content studies.

As a result of these experiments it was found that the sex hormones of the pituitary gland have no effect on general body and brain growth. They, therefore, do not affect the brain-weight, body-weight relations. The growth hormone, on the other hand, markedly stimulates body growth but fails to affect the growth or structure of the central nervous system. The growth hormone, therefore, affects the normal brain-weight, body-weight relations in the conditions of these experiments by decreasing the brain-weight, body-weight ratio, by lowering the exponent of relation and by leading to a significant deviation from the body-brain-growth curves as established by Hatai for the normal.

It appears, therefore, that differences in brain weight between the sexes are independent of the influence of sex hormone and that, in spite of the normally high correlation between brain size and body size, this correlation is disturbed when the body is made to grow in excess of normal.

Finally, one may say that experiments such as these lead one to critically consider normally existing biologic correlations and to conclude that these are probably mere manifestations of some common factor, and as yet unknown "biologic formula" which regulates the progressive development of the more or less related structural and functional components in such a manner that there results a harmoniously functioning psychobiologic unit.



# PROLAPSUS UTERI

## WITH SPECIAL REFERENCE TO THE MANCHESTER-FOTHERGILL OPERATION

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The object in presenting this paper is to emphasize the structures responsible for prolapsus uteri and to make a plea for an anatomic and physiologic approach to the repair of this condition.

### HISTORICAL DATA

In August, 1835, in the Reports of the Royal Academy of Medicine,<sup>1</sup> it was stated that M. Girardin in 1822 suggested excision of the vagina for treatment of prolapsus uteri, but the procedure was not carried out until 1831 by Marshall Hall. His procedure consisted in excision of a strip of vaginal mucosa, 1.5 inches wide, from the anterior vaginal wall and approximation of the edges by interrupted sutures. Duffenbach in 1836 modified this slightly. Kennedy in 1839 destroyed the vaginal mucosa by cautery, and nitric acid was used by Phillips the same year. The first total colpocleisis was performed by Fricke of Hamburg in 1832. He excised a strip of tissue from the labia majora, a fingerbreadth in width and of some thickness, beginning the incision the breadth of two fingers from the anterior commissure and ending by joining at a fingerbreadth behind the posterior commissure. The same procedure was carried out on the opposite side. An oiled sponge was introduced into the vagina to keep up the prolapsus, and the edges were approximated with interrupted sutures. Gedding in 1839 combined the principles advocated by Hall and Fricke, but in addition excised a segment of mucosa from the lateral wall of the vagina, causing constriction of the anteroposterior diameter. Gedding's operation was modified farther by Brown in 1853 by removing a strip of mucosa over the bladder area with the idea of better returning the prolapsed bladder. Savaga in 1856 suggested that better results might be obtained from the above procedure by dissecting away the entire thickness of tissue down to the fascia of the perineum.

Marion Sims in 1858 began using the technic

of Hall but carried out the procedure in latero-prone or knee-chest position. Emmet in 1862 utilized the procedure advocated by Hall, but also denuded the entire anterior vaginal wall down to the level of the cervix.

LeFort in 1877 made a radical departure from the older methods and published an account of his method of treatment of prolapsus uteri in elderly women, with which we are all familiar. He used silver wire, but this has been discontinued. Neugebauer in 1879 reported a modification of the LeFort procedure without giving LeFort credit for his originality.

In 1888 Cohn<sup>2</sup> published results of 105 cases of prolapsus uteri treated by colporrhaphy by Olshausen and Schroder. Anterior and posterior colporrhaphies were performed alone and in combination.

Donald<sup>3</sup> of Manchester, England, in 1888 was the first to recognize the structures responsible for prolapsus uteri and advocated a new procedure for the cure of this condition, the so-called Manchester operation. Fothergill<sup>4</sup> recognized the soundness of the new operation and with some modifications popularized the procedure. It also has a strong advocate in Shaw.<sup>5</sup> Halban<sup>6</sup> modified the Manchester procedure after he confirmed Donald's theory of the etiology of prolapsus uteri.

Baldy, Coffey, Gilliam, Simpson, Webster and Olshausen advocated round ligament suspension as a treatment. Some combined vaginal plastic surgery with suspension and seemed to get good results, at least for a few years.

Schauta<sup>7</sup> in 1907 advocated the interposition operation. This was modified by Wertheim<sup>8</sup> and introduced in America by Watkins<sup>9</sup> in 1912. Kocker advocated fixation of the uterus by the abdominal route. Mayo in 1915 advocated vaginal hysterectomy for the cure of prolapsus uteri. Bissell<sup>10</sup> also advocated this type of procedure and devised a technic for vaginal hysterectomy.



## ETIOLOGY

Prolapsus uteri cannot be treated intelligently unless one has a knowledge of the anatomic structures responsible for maintaining the position of this organ. These structures have been clearly demonstrated by Donald, Mackenrodt,<sup>11</sup> Halban,<sup>12</sup> Tandler, Fothergill and Bonney,<sup>13</sup> and more recently by Mengert in this country. Yet it seems that they are not fully appreciated by many surgeons who attempt to treat prolapse of the uterus.

Donald in 1888 recognized the importance of the tissues investing the vagina and lower part of the uterus although his attention was concentrated on the parametrial tissues. Mackenrodt in 1895 felt that the parametrial and paravaginal tissues were the primary support of the uterus, and the structure at the base of the broad ligament is named the "Mackenrodt ligament." Fothergill also recognized the base of the broad ligament as the support of the uterus.

Bonney wrote an excellent paper on the subject confirming these structures as the support of the uterus, and this comes from a gynecologist who for years has been performing the Wertheim operation for carcinoma of the cervix. It has been said that one has never explored the pelvis until one has performed this operation.

The recent experiments carried out by Mengert<sup>14</sup> on fresh cadavers are worthy of note. They were performed on 8 fresh female cadavers, none of which had prolapse of the uterus. After attaching a 1 kg. weight to the cervix, the paired structures attached to the uterus were severed in varying sequence and the resulting uterine descent measured.

1. Section of the round, the ovarian, infundibulopelvic and the upper one third of the broad ligament hardly affected the position of the uterus in the pelvis.

2. The pelvic floor, although it was never incised, did not hinder experimental prolapse of the uterus and therefore could not have contributed to uterine support in any of the 8 subjects.

3. Section of the parametrial (the lower two thirds of the broad ligament) and the upper

two thirds of the paravaginal tissues allowed an average uterine descent of 10.5 cm.

4. Marked descent of the uterus amounting to actual prolapse never occurred so long as any part of the upper two thirds of the paravaginal and/or the lower two thirds of the parametrial tissues were intact.

Failure of the structures to provide support is largely due to the damaging effects of parturition. However, the importance of a primary constitutional weakness must not be overlooked. Personal observations would indicate that certain races, notably the Irish, show a frequency of prolapse far above that to be expected only from the trauma of parturition. Conversely, it is a commonly accepted fact that prolapsus uteri is infrequent in the Negro race in spite of the frequency of parturition.

Other contributing factors may be increased intra-abdominal pressure, such as heavy work, chronic cough or abdominal tumors; increased weight of the uterus pushing downward, such as leiomyoma and subinvolution; increased weight of the cervix pulling downward, such as chronic cervicitis and cervical leiomyoma.

## SYMPTOMATOLOGY

The symptoms of prolapse of the uterus and associated structures are too well known to require discussion. The most common symptom is a "dragging sensation" associated with an aching pain in the lower abdomen and back. There may be difficulty in urination and defecation or associated urinary incontinence. If the cervix protrudes from the vagina, ulceration of this organ may occur.

## DIAGNOSIS

The diagnosis of a marked prolapse of the uterus is simple. When present in lesser degree it may be missed with the patient in a reclining position, unless specifically looked for. If there are symptoms that suggest this condition, the cervix should be grasped with a tenaculum and with traction the presence or absence of descent of the organ noted.

Although carcinoma of the cervix in a pro-

lapsed uterus is rare, a piece of tissue should be removed from all suspicious lesions and examined microscopically before any operative procedure is considered. Any uterine bleeding should of course be investigated before treatment of the prolapse is considered.

#### TREATMENT

1. *Prophylaxis*.—Now that we know the structures concerned in prolapsus uteri, i.e., the parametrial and paravaginal tissues, we must attempt to prevent injury to these structures and eliminate other contributing factors.

Prevention of prolonged second stages, perineotomies with or without "outlet forceps," and the elimination of high forceps and deliveries through undilated cervixes will lower the incidence of prolapsus uteri.

Better care during the puerperium until complete involution of the uterus and associated structures has occurred is an important factor. The patient should remain in bed at least ten days and gradually return to the normal routine. She should remain on one floor for at least four weeks, and avoid anything that increases intra-abdominal pressure until eight weeks postpartum. If infection is present, the puerperium should be prolonged, for delayed involution is the rule in these cases.

2. *Palliative Treatment*.—By palliative treatment is meant the use of the pessary in patients who refuse operation or in those who are considered poor surgical risks. Both should be rare, for the operative procedure advocated can be carried out under local anesthesia with practically no reaction.

The pessary best suited for these cases is the Gellhorn or hard rubber ring pessary. It should be removed frequently and the vagina cleansed. Pessaries may be used to allow healing of the ulcerated cervix prior to operation.

The patient with complete prolapse of the uterus, complicated by edema and ulceration of the cervix, should be kept in bed, if possible, until these subside. The cervix may be biopsied and cauterized if necessary.

3. *Surgical*.—As previously stated, the main

object in this paper is to emphasize the structures concerned in prolapse of the uterus and to make a plea for an anatomic and physiologic approach in treating this condition surgically. The fact that the parametrial and paravaginal tissues are responsible for maintaining the position of this organ should at once direct one's attention to these tissues, i.e., the base of the broad ligament. The following operations are employed.

*The Manchester-Fothergill Operation*.—This is the procedure of choice in England for the treatment of prolapsus uteri. Articles by Maier,<sup>15</sup> Thudium, Frank,<sup>16</sup> Gordon,<sup>17</sup> Salmon,<sup>18</sup> Leventhal and Boshes have appeared in the American literature, all recommending the operation. The following description is a modification of the original Manchester technic by Leventhal and Boshes,<sup>19</sup> and is similar to the modification I used. Excellent illustrations appear in this article.

"After the usual preparation as for any vaginal operation, the cervix is grasped with a vulsella and pulled down into the introitus. An inverted 'T'-shaped incision is made, starting just below the external urinary meatus and circumcising the cervical vaginal mucosa just above the external os. The posterior portion of the circular incision is not completed until the pubocervical fascia has been reconstructed in order to conserve blood loss from the posterior flap. The flaps are dissected laterally exposing the bladder with its overlying weakened uteropubic fascial layer. This is accomplished first by sharp and then by blunt dissection. Marked venous bleeding is usually encountered far laterally and this should be controlled by suture before proceeding. The bladder is next freed from the anterior wall of the cervix and pushed upwards by blunt finger dissection. This maneuver makes prominent the 'bladder pillars' of uteropubic fascia on either side. The angles of the bladder must be carefully dissected upwards in order that the ureters may be completely removed from the danger of ligation. The bladder hernia is then reduced by uniting the uteropubic fascia with interrupted Lembert's sutures of catgut. Interrupted silk sutures are placed in two planes in the region of the internal vesical sphincter if incontinence is a prominent symptom.

"The bladder pillars of each side are caught between two clamps at a level of 1 cm. above the plane of cervical amputation. The top one is placed well laterally, and takes in its grasp some cervical and parametrial tissue. When ligated, this stitch includes fibers of parametrium



and uteropubic fascia and marks the location for the parametrial stitches to be placed on later.

"The vaginal mucosa is then dissected free from the cervix laterally and posteriorly, and a hemostatic suture is placed on each side, ligating the cervical branches of the uterine arteries at a level just above the plane of amputation. If a low cul-de-sac is opened into, the peritoneal cavity is closed by a purse-string suture high on the posterior surface of the uterus. The cervix is then amputated circularly or by conical excision. After this, the remaining cervical canal is dilated to a no. 12 or 16 Hegar and the endometrial cavity briskly curetted. Dilatation and curettage after cervical amputation rather than before is not only a simpler and a safer procedure but removal of the infected lower cervix also obviates the forcing of the infectious secretions into the uterine cavity. Wide dilatation also facilitates a more proper inversion of the vaginal mucosa into the cervical canal.

"The vaginal mucosa is then inverted into the canal by modified Sturmdorf stitches placed posteriorly and posteromedially as indicated.

"The parametrial fixation stitches are next placed and include on each side the parametrial tissue just lateral to the transfixed uteropubic ligaments. These are not tied until the anterior inversion stitch for the vaginal mucosa is placed. Tying the fixation stitches unites the parametria in front of the remaining cervix, forcing it backward and anteflexing the corpus. The cervical reconstruction is then completed by tying the anterior vaginal inversion stitch.

"The remaining uteropubic fascia is then united in the midline, including the uterine tissue below the bladder level in order to lend further support to that structure. The vaginal mucosa is then trimmed and united in the midline. This is followed by colpoperineorrhaphy."

The operation can be performed on both young and old, and for all degrees of prolapse of the uterus and cervical stump. However, I wish to emphasize the fact that in the childbearing age the cervix must not be amputated high without sterilization. This can easily be done through an opening in the anterior cul-de-sac, and requires only a few additional minutes. Advancement of the bladder, low amputation of the cervix, and division and suture of the cardinal ligaments anterior to the cervix are indicated if subsequent pregnancies are desired. Shaw reported no difficulty in parturition in a large series of cases, but there was a 16.5 per cent recurrence following delivery *per vaginam*, as would be expected.

In elderly patients and those considered poor surgical risks local anesthesia is suggested. The operation can be easily carried out with this type of anesthesia if one is familiar with the technic.

I would like to emphasize a step that may eliminate some embarrassment, that is, plication of the vesical sphincter at the time of any operation for prolapsus uteri. It is a well-known fact that, although there is no urinary incontinence at the time of the operation, when the uterus is replaced it may appear as a symptom, especially following vaginal hysterectomy.

Shaw reported a series of 2,293 Manchester-Fothergill operations with a 97 per cent cure and a mortality of 0.43 per cent. A similar technic has been used by me in a small series of 42 cases involving all degrees of prolapse. The patients were followed for a year or longer, and there were no recurrences with the single exception of an asymptomatic recurrent cystocele. There were no fatalities.

*Vaginal Hysterectomy.*—This is the procedure of choice when there is uterine pathology associated with prolapse of the organ, and the procedure of second choice when there is no uterine pathology, provided the patient is not desirous of retaining the organ for reproductive or sentimental purposes.

The technics described by Mayo, Bissell and others give satisfactory results provided they are carried out properly. Special attention must be given to fixing the bases of the broad ligaments to the apex of the vagina and plication of the uterosacral ligaments, since prolapse of the vagina, especially in a young woman, is difficult to treat and an enterocele is very discouraging.

The mortality and morbidity are slightly higher in vaginal hysterectomy than in the Manchester-Fothergill operation because the peritoneal cavity is opened. However, the mortality should be very low and there should be little shock if one is accustomed to working through the vagina.

*Anterior Colporrhaphy, Colpoperineorrhaphy, and Ventrosuspension of the Uterus.*—This combination has little if any place in the treatment



of prolapsus uteri. It makes no attempt to approach the structures responsible for descent of the uterus and is associated with a high percentage of failures. This combination gives satisfactory results for only a few years and should be used only as a palliative procedure in an occasional case of complete prolapse in a person desirous of more children.

*Anterior Colporrhaphy, Colpoperineorrhaphy, and Ventrofixation of the Uterus.*—This has the same disadvantages as the above, but the percentage of cures is greater. It can only be used after the menopause or with sterilization and subjects the patient to the added risk of a laparotomy.

*Schauta-Wertheim-Watkins Interposition Operation.*—This is probably the most unanatomic and unphysiologic procedure ever advocated, unless it is the procedure advocated by LeFort, and there is little excuse for its existence.

*Colpocleisis and Colpectomy.*—Unfortunately, these procedures have been revived in recent years and modifications advocated. I think Goodall<sup>20</sup> is to be congratulated for eliminating two thirds of the LeFort principles, and when he eliminates the remaining one third he will have a procedure that approaches 100 per cent efficiency. Probably the only excuse for colpocleisis or colpectomy would be in treating prolapse of the vagina following total hysterectomy in an elderly person.

*Richardson Operation.*—Richardson<sup>21</sup> in 1937 advocated a procedure for the treatment of prolapsus uteri associated with uterine pathology; it seems to have little advantage over a well performed vaginal hysterectomy.

#### SUMMARY

A review of the literature on the treatment of prolapsus uteri indicated that insufficient stress has been laid upon the structures responsible for the occurrence of prolapse.

Experimental evidence indicates that the bases of the broad ligaments and the upper third of the paravaginal tissues are the structures responsible for maintaining the normal position of the uterus. The factors responsible for the development of prolapsus uteri have been enumerated.

The most logical approach to restoration of normal anatomy in those cases with no uterine pathology appears to be the Manchester-Fothergill operation, or some modification of its basic principles. When uterine pathology is present, vaginal hysterectomy is the procedure of choice.

#### BIBLIOGRAPHY

1. WRANA, J.: M. Times, New York, 1938, 66, 22.
2. COHN, E.: Ztschr. f. Geburtsh u. Gynäk., Stuttg., 1887-88, 14, 500.
3. DONALD, A.: J. Obst. & Gynaec. Brit. Emp., 1921, 28, 256.
4. FOTHERGILL, W. E.: Proc. Roy. Soc. Med., Lond., 1907-08, 1, 43; J. Obst. & Gynaec. Brit. Emp., 1914, 26, 29; Ibid., 1915, 27, 146; M. Press, Lond., 1921, 111, 471.
5. SHAW, W. F.: Am. J. Obst. & Gynec., 1933, 26, 667; J. Obst. & Gynaec. Brit. Emp., 1934, 41, 853.
6. HALBAN, J., AND TANDLER, J.: Anatomie und Aetiologie der Genitalprolapse beim Weibe. Wien, W. Braumüller, 1907.
7. SCHAUTA, F.: Gynaek Rundschau, Berl. u. Wien, 1907, 1, 145.
8. WERTHEIM, E.: Arch. f. Gynaek., Berlin, 1914, 102, 201.
9. WATKINS, T. J.: Tr. Am. Gynec. Soc., 1909, 34, 123.
10. BISSELL, D.: Surg., Gynec. Obst., 1919, 28, 138.
11. MACKENRODT, A.: Arch f. Gynaek, Berl., 1894-5, 48, 393.
12. HALBAN, J.: Gynakologische Operationslehre. Berlin, Urban and Schwarzenberg, 1932.
13. BONNEY, V.: J. Obst. & Gynaec. Brit. Emp., 1935, 41, 669.
14. MENGERT, W. F.: Am. J. Obst. & Gynec., 1936, 31, 775.
15. MAIER, F. H., AND THUDIUM, W. J.: Ibid., 1932, 24, 248.
16. FRANK, R. T.: Ibid., 1935, 29, 240.
17. GORDON, C. A.: Am. J. Surg., 1936, 33, 464; Am. J. Obst. & Gynec., 1935, 29, 547.
18. SALMON, U. J.: Ibid., 1937, 34, 58.
19. LEVENTHAL AND BOSHES: Ibid., 1939, 37, 384.
20. GOODALL, J. R., AND POWER, R. M. H.: Ibid., 1937, 34, 968.
21. RICHARDSON, E. H.: Ibid., 1937, 34, 814.

## CLINICAL SUBVITAMINOTIC DEFICIENCY STATES

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The well-defined clinical entities of the avitaminoses represented by xerophthalmia and hemeralopia, the polyneuritides of beriberi, pellagra, scurvy and rickets are now classical. They are definitely recognizable, preventable and curable in the present state of our knowledge. The object of this paper is to present some clinical observations on a frequently existing state, namely, clinically recognizable subvitaminotic deficiencies.

Several years ago when the realization of these deficiencies made themselves apparent to me, I classified them as the hypovitaminoses or subvitaminoses. The use of these terms alone gave no indication as to whether or not they were recognizable clinically and would seem to indicate only the presence of a decreased vitamin intake. With further observation came the realization that evidences of vitamin deficiencies manifested themselves in patients living on a diet apparently adequate in vitamin content, the deficiency arising apparently from improper utilization of the vitamins. The term "clinical subvitaminotic deficiency states" appears to cover both situations, diminished vitamin intake and disturbed utilization.

It can be stated with a probable degree of assurance that a diet deficient in one vitamin is deficient in others and that most deficiencies are, therefore, multiple. As will be pointed out later, this situation is a part of the groundwork on which vitamin treatment is instituted.

There has been a tremendous literary outburst in medical journals and in medical forums with reference to vitamins in the past year or so. The doctor's desk is bombarded with drug-house literature concerning many new single and combined vitamin capsules, tablets, ampules and elixirs, each one of which would seem to offer a vitamin Utopia. It would be very easy to allow oneself to become overenthusiastic about "this or that" product if the doctor did not proceed cautiously in outlining his scheme of vitamin therapeutics.

One of the most confusing elements in vitamin therapy is the absence of a standard unit. An effort is now being made to standardize all products on a basis of an international unit. I will not attempt to confuse the issue by giving the various units as they are now defined but will simply say this, that the physician must use the product that he has established clinically as having given satisfactory results when used in adequate dosage.

### VITAMIN A

Vitamin A, a fat-soluble vitamin, is essential to growth, vision and the maintenance of certain specialized body tissues. The liver is its chief storehouse. Vitamin A deficiencies may arise from failure of carotene (provitamin A) to reach the liver where it is converted into Vitamin A, in the presence of gastrointestinal lesions, especially in the absence of bile. When we come to a consideration of Vitamin B deficiencies and its effect on gastrointestinal function we will realize that the "B" deficiency might well precipitate or aggravate the "A" deficiency. The growth factor of "A" is one which concerns primarily the pediatrician. Mild hemeralopia probably is common. Anorexia is a symptom common to all of these deficiencies. My chief concern with Vitamin A has been in relation to the respiratory infections in association with Vitamin D. I feel definitely that the incidence and severity of respiratory infections are lessened and the duration is shortened when large doses of Vitamin A are employed prophylactically along with Vitamin D over a sufficient length of time. Many studies have borne out this observation. It has been stated that a minimum of 5,000 International Units daily would seem to be necessary to produce the desired effect. This means 5,000 utilizable units and would indicate that larger doses are necessary when absorption and storage are delayed for any reason. I have, too, very definitely the feeling that large doses of cod-liver oil and cod-liver oil concentrates are



helpful in minimizing the asthenic states that frequently follow the severer respiratory infections, and even at times help to shorten the duration of the particular attack. The use of Vitamin A in the prevention of the recurrence of renal calculus formation and in the relief of dental enamel changes has not been within the scope of my experience. Some observers believe that thyroxin and Vitamin A are antagonistic. Certainly in my experience this has not been true. To date there is no clinical evidence of a hypervitaminosis A.

#### VITAMIN B

Vitamin B, a water-soluble vitamin, has its richest source in yeast and the seeds of plants. Vitamin B is a complex substance made up of a half dozen or more components of which B<sub>1</sub> (thiamin chloride) has been isolated and synthesized in crystalline form. The remainder of the components will be considered as the Vitamin B complex.

Without entering into any discussions of the complex "B" factors and without a comment on beriberi and pellagra, I want to direct your attention toward other clinical Vitamin B deficiencies. In my experience Vitamin B deficiency is definitely related to loss of appetite and to the existence of many diagnostically indefinite digestive symptoms, which have been so frequently grouped under the term "functional dyspepsia" and "functional indigestion." These deficiencies are frequently associated with people with unstable neurocirculatory systems and this instability is frequently a manifestation of vitamin deficiency. Changes in gastric acidity with definite hypomotility of the entire gastrointestinal tract have been demonstrated. It is not difficult, then, to visualize the frequently observed syndrome of excess gas, belching, gastric retention, sour eructations and atonic constipation which results from this deficiency. In the minds of many there is undoubtedly a relationship between chronic ulcerative colitis and Vitamin B deficiency. The role of Vitamin B<sub>1</sub> in polyneuritis is common knowledge. The mere presence of neuritis is

not in itself sufficient evidence of a "B<sub>1</sub>" deficiency. Toxic factors and focal infection must first be removed as causal agents. The administration of Vitamin B<sub>1</sub> concomitantly with the removal of these factors has frequently been found to be a useful therapeutic adjunct. The polyneuritis of the alcoholic is definitely "B<sub>1</sub>" in origin. The recent introduction of nicotinic acid has made possible valuable and important contributions in the study of Vitamin B<sub>1</sub> and the Vitamin B complex. I have recently had a patient who developed severe polyneuritis, sore tongue, and dermatitis of the dorsum of the hands and elbows and a persistent and marked anorexia as a result of chronic alcoholism. The prompt clearing of the tongue and skin condition when nicotinic acid alone was administered without its having any effect on the neuritis was striking. When Vitamin B<sub>1</sub> was administered orally and parenterally the neuritis was relieved. The appetite responded more slowly to treatment than did any of the other symptoms.

Varying opinions have been expressed with reference to Vitamin B and carbohydrate metabolism. The presence of hyperglycemia in deficiency states would seem to lend weight to the existence of some relationship between the two of them. Mild cases of diabetes have been benefited by the administration of 10 to 30 grams of dried yeast over a prolonged period of time.

Means, speaking before the recent International Conference on Goiter, cited the increased need for Vitamin B in states of hypermetabolism and demonstrated an increased elimination of Vitamin B<sub>1</sub> in this condition. He and his co-workers demonstrated increased appetite and gain in weight in individuals with hyperthyroidism without change in their basal metabolic rate when Vitamin B<sub>1</sub> was added to the diet. Following him Frazier related his experiences in the preoperative use of Vitamin B<sub>1</sub> in cases of toxic goiter. Using 10 mg. (3,000 International Units) of Vitamin B<sub>1</sub> every 2 days, and 7 Gm. of brewer's yeast daily, he found that the pulse became slower in a shorter time, that the preoperative treatment time was reduced



and confirmed Means' findings on the increased appetite and weight gain. He gave thyroxin to rats on a Vitamin B<sub>1</sub> deficient diet and found that they developed hyperthyroid symptoms sooner than those on "B<sub>1</sub>" sufficient diets.

Cardiac weakness even in the absence of frank beriberi seems to be a definite manifestation of B deficiency. The sudden collapse of the cardiovascular system with death in elderly people who have been on a prolonged reduced postoperative diet may possibly be on the basis of a Vitamin B<sub>1</sub> deficiency.

#### VITAMIN C

Vitamin C is water-soluble and has been crystallized as cevitamic acid. The richest sources are found in orange juice and tomato juice. Lemons, grapefruit, tangerines, raw cabbage, water cress and fresh strawberries are among the more adequate sources.

Clinical scurvy resulting from a frank Vitamin C deficiency is rare, but roentgenologic evidence is at hand showing the presence of definite scorbutic lesions in children dying from other causes and not presenting the clinical signs of scurvy before death. If this condition exists it is not hard to visualize the presence of sub-avitaminotic deficiencies in persons without frank scorbutic lesions.

The role of Vitamin C in the breaking down of intercellular substances with subsequent hemorrhage has thrown wide open the question of the hemorrhagic diatheses and is the basis of the capillary resistance tests for Vitamin C deficiencies (although this test is not dependable and may not be specific). The presence of lowered utilizable Vitamin C when gingivitis, bleeding gums and dental changes exist has been demonstrated. The nature of the lesion in Vitamin C deficiencies explains its relationship to the development of anemia. It is associated with degeneration of the bone marrow and poor bone formation. Recent evidence would seem to indicate that Vitamin C, as well as Vitamins A and D, has an anti-infective factor. Deficiency of this vitamin is also productive of anorexia.

#### VITAMIN D

The antirachitic Vitamin D is fat-soluble, and several sterols possessing Vitamin D activity have been prepared in pure crystalline form. Butter, egg yolk and liver, especially the liver of the cod, tuna and halibut, are the richest sources of this vitamin. The picture of rickets is due to its prolonged total or almost total deficiency.

Adequate Vitamin D in the diet is essential to the normal metabolism of calcium and phosphorus in the body and is indispensable for maintaining normal calcium and phosphorus concentration and ratio in the blood, and for normal bone formation. It is specific in the treatment of infantile rickets. It plays an important role in tooth formation and in the maintenance of normal bone structure. Its anti-infective role has been discussed along with Vitamin A. It also now appears to be a factor in the proper maintenance of gastrointestinal function. A deficient intake results in anorexia, a symptom that has been seen to be present as well in Vitamins A, B, and C deficiencies. Cod-liver oil is the most used and best known source of Vitamin D. The need for proper emulsification to permit absorption and utilization indicates that its administration as the cod-liver oil concentrate offers the best source, especially in the presence of gastrointestinal disturbances.

#### VITAMIN E

Having had no experience in the use of Vitamin E, I can only say that it is a fat-soluble vitamin known as the antisterility vitamin. Its richest sources are wheat germ, fresh lettuce leaf, whole grain cereals and the vegetable oils of corn, olives, cotton seed and palm. Certain cases of habitual and threatened abortion have been reported as being benefited by the use of wheat germ oil.

#### VITAMIN K

A recent report from the Proceedings of the Staff Meetings of the Mayo Clinic indicates that the administration of Vitamin K together with bile or bile salts to patients who have jaundice

will reduce elevated prothrombin clotting time to within normal limits and that in certain cases it probably prevented hemorrhage or at least had a definite inhibitory effect on actual bleeding. The Vitamin K administered alone when bile was absent from the intestinal tract had little or no effect in decreasing the elevated prothrombin time in one individual.

#### GENERAL CONSIDERATIONS AND TREATMENT

To date no practical, short, economic or thoroughly satisfactory laboratory procedures have been developed for the recognition of vitamin deficiencies. The simplest test is the capillary resistance test for Vitamin C deficiency used with the blood pressure apparatus, but this is not dependable and may not be specific. Tests based on excretion values are to my mind inadequate and do not present the true picture, too many uncontrolled factors remaining unexplained. The clinical manifestations give a clearer picture and a more satisfactory one at the moment until other tests may be devised.

I would like to stress once more as we approach the treatment of these deficiencies that they may be considered on a basis of multiple and not single deficiency syndromes. If this point of view is not adopted discouraging failures will result. We cannot rely on diet alone in their treatment. Even the apparently adequate diet must be fortified with concentrated sources of the vitamins. In the administration of Vitamins A and D, the proper ratio of three parts of A to one part of D is essential if the desired effect is to be obtained. It should be borne in mind that the administration of mineral oil with the fat-soluble vitamins is contraindicated, since it interferes with their proper absorption. Any discussion of the vitamin deficiencies would not be complete without reference to the need of their addition to the diet in such conditions as prolonged diarrhea, sprue or wherever the diet has been or must be curtailed, as in peptic ulcer, diabetes, low-caloric

reduction diets and the inadequate diets of prolonged postoperative cases, especially gastrointestinal.

It has never seemed feasible to me (and this line of reasoning is based on experience) that the use of "shotgun capsules" containing both the fat- and water-soluble vitamins should be effective. I do not employ the well-known A, B, D, G capsules which are so familiar with everyone who sees the drug-store counter from early fall until spring. Concentrate mixtures of the various liver oils, with or without ergosterol, have not been as useful nor as effective in my hands as the use of the pure cod-liver oil or one of its concentrates. The administration of carotene (the provitamin A) in place of the "A" itself has not been effective. The selection of the vitamin product that one uses must be based entirely on clinical observation and not on unit dosage alone nor on the promises of the drug-house circular. I have in many instances observed the effect with satisfaction of the administration of large and adequate doses of all of the vitamins. They must be administered over a considerable period of time in order to obtain the maximum desired effect. This means that they should be administered throughout the summer as well as through the winter months. I have never observed any ill effects from the use of large doses of any of the vitamins. On a number of occasions I have been told that a high-caloric diet alone, in the absence of organic disease, if carefully followed would relieve under-nutrition. I have seen this fail in the absence of sufficient and properly administered vitamins.

The field is wide open and I feel certain that the careful clinician cannot help but feel that the use of vitamin therapy is now on a firm foundation although future clinical and experimental observations will undoubtedly open new roads to an even greater and more useful application of our knowledge.



# NEUROBLASTOMA

## REVIEW AND REPORT OF A CASE\*

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Neuroblastoma, or better, sympathicoblastoma, has been recognized since 1910, when J. H. Wright<sup>1</sup> published his study which was entitled "Neurocytoma or Neuroblastoma, a Kind of Tumor Not Generally Recognized." Prior to this time it had been described as sarcoma or glioma. The clinical aspects of the neoplasm had been set forth by William Pepper in 1901 and by Hutchison in 1907. Pepper<sup>2</sup> believed it to be a congenital tumor, and the cases he described were in young infants with metastases to retroperitoneal lymph-nodes, liver and lungs, whereas Hutchison<sup>3</sup> described cases in children with metastases also to cranial bones and the walls of the orbits. The differences were probably due to the ages of the tumors described, Pepper's type being composed of less differentiated or younger sympathetic nerve cells, with greater invasiveness and rapidity of growth.

Half or more of the cases of sympathicoblastoma affect infants under two years of age, and almost all children affected are under eight or ten years old. Askin and Geschickter<sup>4</sup> in August 1935 published a clinical and pathologic study of 17 cases, and from their article we are quoting freely. One of their reports "was the case of a stillborn infant in which metastases from an adrenal tumor to the liver caused obstruction to labor. Morcellation was necessary in making delivery. The eldest child was aged 13 years."

Sympathicoblastoma is a tumor taking its origin in young, undifferentiated cells of the sympathetic nervous system. The commonest point of origin is the medulla of the suprarenal gland which is derived from this source (sympathetic nerve cells). On the other hand, a neuroblastoma of this type may take its origin

from cervical, paravertebral, abdominal and pelvic plexuses of sympathetic ganglia. Thus, Startz and Abrams<sup>5</sup> describe a colored child of 3 years who showed by X-ray "a large globular partly calcified tumor mass in the right upper lobe" of the lung, which proved at autopsy to be a neuroblastoma of upper sympathetic ganglion with massive metastasis to lymph-nodes, metastasis to bone, extensive lymphatic and blood vessel permeation, and transverse myelitis in the cervical region due to compression "and invasion of the spinal canal through the intervertebral foramina."

Wright and Paige<sup>6</sup> refer to "the possibility that these tumors may undergo metamorphosis from embryonal to differentiated forms as the age of the patient increases" as "suggested by the extraordinary case of Cushing and Wolbach.<sup>7</sup> In this instance a tumor, histologically a neurocytoma, was removed from the subcutaneous tissue over the dorsal spine of a boy. Several years later the child developed symptoms of compression of the spinal cord and laminectomy was performed at the level of the original tumor. The intraspinal mass proved to be a well differentiated ganglioneuroma."

Ganglioneuromata are relatively benign.

Askin and Geschickter<sup>4</sup> from the clinical records of 17 cases classified the symptoms and findings as follows:

The discovery of an abdominal mass, present in 15 of 17 cases, was most commonly the cause for seeking medical advice. The mass was usually painless. Fever and vomiting were present in about half of the cases. Abdominal pain, loss of weight and anorexia were present in about one half of the children. Pallor, ecchymosis of the eyelids and exophthalmos, and general glandular enlargement were present in one quarter of them. Less frequent symptoms

\* Read before the Society, March 15, 1939.



were pains in the bones and joints making the physician consider osteomyelitis or tuberculosis. In one or two cases there was complaint of restlessness, constipation, diarrhea, poor cry from birth, crying at night, diminished activity, dyspnea and precordial distress.

The physical signs showed an abdominal mass in 15 cases, fever of 102° F. or less in half, and between 102° and 106° F. in about half of 14 children. Pallor and enlarged liver were present in half the cases. Leukocytosis was present in 7 children. Bone involvement in the roentgenogram, undernutrition and metastatic nodules were present in one third of the cases. Enlargement of lymph-nodes, eye signs (exophthalmos, dissolution of the eyelid, swelling in the orbit, diminished vision) and anemia were present in one quarter of the children. Tenderness in the abdomen was present in only 1 case, dilated veins in the skin over the abdomen in 1 case, ascites in 2 cases, and positive urinary findings, hematuria and albuminuria in only 1 case.

X-ray findings relate chiefly to the bone metastases which may be found in the skull, long bones of the upper and lower extremities, the pelvic bones, the ribs and elsewhere. Separation of the sutures of the cranium may result from increased pressure due to metastasis. The characteristic X-ray finding in long bones is a wedge-shaped excavation with the base in the cortex of the diaphysis. There may or may not be periosteal reaction over the site. The flat bones of the skull in places look moth-eaten, in other places thickenings resemble the skull bones of erythroblastic anemia. Similar X-ray changes in bones may be found in disturbances of lipid metabolism or xanthomatosis (Gaucher's, Christian-Schüller's, and Niemann-Pick's disease), in chloroma, in lymphosarcoma and embryonal rhabdomyosarcoma of the kidneys (Wilms's tumors). Metastases from Wilms's tumors are rare. The bones invaded are the pelvic bones by direct extension of the neoplasm. Leukemia may give the identical picture by X-ray that is found in bone metastasis of sympatheticoblastoma. Ewing's tumor is so charac-

teristic roentgenologically as to be readily recognized, and responds to X-ray therapy.

The course of this disease is in most cases quite rapid, the fatal termination being a matter of a few months after the disease makes its appearance, largely because of the widespread metastases, which have been indicated. It is generally stated that neuroblastoma is resistant to X-ray therapy, yet this is not always the case, as well authenticated examples of destruction of the tumor by X-ray may be found. Wright and Paige<sup>6</sup> report the case of an Italian girl who has lived "six years after removal of a sympatheticoblastoma but retains her original signs and symptoms of compression of the spinal cord" from invasion of the spinal canal by the tumor. She received a total of 2400 r units in her first year of life following surgical removal of the neurocytoma of the adrenal gland.

Dr. Edwin P. Lehman<sup>8</sup> of the University of Virginia Hospital reported in 1932, "Adrenal Neuroblastoma in Infancy—15-year Survival." Dr. Willard Bartlett, "when the infant was 11 months of age, removed a typical neuroblastoma relatively undifferentiated."

Wright and Paige followed up the case originally reported by Martha Wollstein<sup>9</sup> in 1928. "In this instance a tumor of the adrenal region was removed from an infant 15 months old. The microscopic diagnosis was ganglioneuroma and sympatheticoblastoma. At the time of publication of Wollstein's paper the child had survived for 17 months. Radiation therapy had been given. We have been able to trace this child further and know that he was alive and well at the age of 12 years, i.e., 11 years after operation.

"Surgical removal of sympatheticoblastomas followed by radiation therapy may occasionally be effective in preventing recurrence or metastasis."

#### REPORT OF CASE

A white female child, B. G., born March 3, 1938, was admitted to the Children's Hospital on June 30, 1938 with the chief complaint of "bruises and lumps" over the skin of 2 months' duration. When the infant was about 2 months old the mother first noticed a small

lump in the skin over the right popliteal space and one near the right hip region. New lumps kept cropping up over various parts of the body. At first the skin overlying these lumps would have a normal appearance, but in a few days they would take on a bruised purplish discoloration. The family history, past history and feeding history were essentially negative. The infant had been gaining normally in weight.

Examination of the child on admission disclosed a well-developed and fairly well-nourished but somewhat pale-looking female infant not appearing acutely ill. The temperature was 98.8°F. The head, neck, chest, abdomen and extremities were essentially normal. Lumpy nodular tumor masses were found in the skin over both iliac crests, both thighs, the right popliteal space, over both arms and in the region over the left chest. These tumor masses were not tender and varied from 1.5 to 4 cm. in diameter, were firm and ovoid or spherical, and seemed to be imbedded and freely movable in the subcutaneous tissue, but were attached to the overlying skin which was bluish. There was no lymphadenopathy. The liver and spleen were not enlarged. The external genitalia were normal.

The urinalyses showed only a slight amount of albumin. No red blood cells were present. The hemoglobin was 71 per cent with red cells numbering 3,580,000 and the white cells totalling 7,600 per cu. mm. of blood, with 48 per cent neutrophils, 45 per cent lymphocytes, 2 per cent eosinophils and 5 per cent monocytes.

A biopsy of the tumor mass over the right iliac crest was done on July 11 and was reported as showing evidence of a lymphosarcomatous type of growth. A sternal puncture done on July 25 showed no evidence of pathology in the bone marrow there.

In the beginning of August, a mass was first noted in the left upper quadrant of the abdomen, which kept increasing rapidly in size. An intravenous pyelogram showed the right kidney to be normal and the left one displaced downward and laterally with an elongated upper calyx. The appearance was suggestive of a retroperitoneal or adrenal tumor displacing the kidney. A course of 5 X-ray treatments was given.

The abdominal tumor as well as the other tumor masses proved to be radioresistant and kept increasing in size. The nodular mass in the right axilla reached the size of a large orange. The child was given several blood transfusions and was discharged September 27 with a diagnosis of "retroperitoneal lymphosarcoma with widespread metastases."

The subsequent course of this case was progressively downhill. There were two more admissions to the hospital, the last one on November 18, 1938. At this time the child had a marked cachectic appearance. The head was enlarged with bulgings over both frontoparietal regions, more marked on the left side.

There was bilateral ecchymosis of the eyelids with

mild proptosis. Subconjunctival hemorrhage was present on the right. New tumor masses were found and the older ones had increased considerably in size. The liver was 4 finger-breadths below the costal margin. Only the right axillary and inguinal lymph-nodes were enlarged. Ulceration was present over the sternum and in the right axilla. The blood examination showed the hemoglobin to be 44 per cent, the erythrocytes to number 1,790,000 and the white blood cells to number 6,400, with 67 per cent neutrophils. A smear showed moderate achromia. The platelet count was 10,000. The urine did not show red blood cells at any time. X-ray films of the skeletal system showed widespread metastases to the skull and long bones.

The patient died December 18, 1938.

**Postmortem Examination.**—The body was emaciated with practically no subcutaneous fat. The eyeballs were moderately "pushed-out" and there was extravasated blood beneath the skin of the upper eyelids and the conjunctivae. In the right supraclavicular region there was a rubbery, freely movable nodular mass about 4 cm. in diameter. A similar tumor in the right axilla was sufficiently large to cause abduction of the arm. At the point of the right shoulder there was a mass 6 cm. in diameter with ulceration of the overlying skin. Two similar small nodules were noted on the left arm and in the left inguinal region.

On the left side of the head in the frontoparietal region there was a smooth globular swelling, bony hard and measuring 8 cm. in diameter. Subcutaneous extravasation of blood was present in this area. The swelling noted externally involved the skull bones with intact periosteum on either side. Grossly the mass was dark red and spongy and intermingled with bone spicules. A similar fairly soft neoplastic infiltration was noted in the two temporal and left frontal fossae.

The brain was grossly normal.

The inner surface of the ribs presented red rubbery fusiform enlargements, especially the upper 4 or 5. These measured up to 8 mm. in diameter and projected 6 mm. from the surface of the ribs.

Several small rather firm nodules noted in the hilar region in each lung, and several small areas of bronchopneumonia were present.

The liver weighed 550 Gm. (normal 260 Gm.). Over the surface there were numerous circular umbilicated white lesions varying considerably in size. Similar white nodules were seen in the parenchyma on section. Some of these nodules showed hemorrhage.

The pancreas was white and very nodular and was enveloped by a mass of enlarged glands which extended from the left kidney.

The tumor involving the left kidney weighed 330 Gm. It was nodular, fairly soft, and mottled reddish-white. It involved the upper two thirds; the lower one



third appeared grossly fairly normal. The right kidney weighed 30 Gm.

The right ovary was about 6 times the size of the left. It was soft and dark red with several small circular white areas.

Gross metastases involved the bronchial, mediastinal, mesenteric, omental and retroperitoneal lymph-nodes.

#### DISCUSSION

Neuroblastoma or sympathicoblastoma of abdominal origin, usually primary in the adrenal medulla, has been rare in our experience at the Children's Hospital during the past 25 years, only 3 cases having been diagnosed in that time. This apparent paucity should not prevent one from considering this condition as a diagnostic possibility when abdominal and osseous tumors in young children are found, since leukemia, lymphosarcoma, Ewing's and Wilms's tumors are occasionally confused with this type of neoplasm.

Although most of these tumors arise from the primitive cells of the sympathetic nervous system found in the adrenal medulla, the sympathicoblast or neuroblast, they can have their origin from any portion of the sympathetic nervous system. Those primary in the eye are quite similar.

Tumors of the suprarenal gland are of four main types depending on the stage of development of the cells making up the neoplasm. They are (1) the sympathogonioma arising from the embryonic type of cell, the sympathogone, and are usually seen in uterine life or during early infancy; (2) the sympathicoblastoma or neuroblastoma originating from either the sympathicoblasts or chromaphiloblasts. A distinction is often not made between these two types of tumor; the growths are usually grayish-yellow with hemorrhagic borders and umbilicated centers when involving large organs such as the liver. The cells making up the masses are similar to lymphocytes, often closely packed and sometimes grouped in a characteristic rosette formation; a fibrillary network similar to glial fibers is often observed in association with these cells. The other types of tumors, (3) ganglioneuroma and (4) paraganglioma or chromaffinoma are usually seen in older individuals

and represent a more differentiated type of cell. They are more likely to be benign.

Sympathicoblastomas or neuroblastomas were originally thought to be small round-cell sarcomas, but in 1910 Wright rather firmly established their identity as originating from the cells of the sympathetic nervous system. Because of the rather embryonic type of cell, they are usually seen in children under 3 years of age.

In the past sympathicoblastomas or neuroblastomas have been divided clinically into two types: (1) Pepper syndrome with the primary growth often in the right adrenal, the principal metastases being to the mesenteric lymph-nodes and the liver; (2) the Hutchison type, usually arising from the original tumor in the left adrenal with rather widespread metastases notably to the long bones and the skull, and with characteristic localization about the orbit producing proptosis. To a great extent these two types are dependent on the routes of venous and lymphatic drainage, but one finds that such a classification can serve only in a general way since there is considerable overlapping of the two groups. Sometimes both adrenals are affected. In the three cases we have studied, the left adrenal was involved in all, one being of Pepper's type, the other two belonging to the Hutchison group.

Metastasis to the skin and superficial lymph-nodes was observed rather early in the case we are reporting and it was during this period of hospitalization that microscopic examination of one of these superficial tumor masses showed it to be composed of many small, deeply staining cells of lymphoid type, the appearance being that of a lymphoblastoma. To aid in the diagnosis irradiation was given without change in size of the mass. We felt that this indicated that the tumor was not of lymphoid origin and was probably a neuroblastoma.

This latter impression was definitely confirmed when the necropsy tissue was examined microscopically. Material from the renal tumor and the metastatic newgrowths showed essentially the same picture. Following is the pathologic report: "The neoplasm is made up of deeply



staining round cells of variable size, in general the size of a lymphocyte, although some are two to three times larger. These are surrounded or enmeshed by pink-staining fibrillar structures similar to glial fibers. These round cells are presumably of neurogenic origin, but no definite rosettes are noted. Collections of the cells are separated from other similar groups by fibrous tissue. The tumor is probably a neuroblastoma."

Practically all of the organs of the body were the sites of infiltration by neuroblastic cells. The heart, spleen, gastrointestinal tract, the right kidney and adrenal and the generative organs with the exception of the right ovary appeared to have escaped involvement. Although the left adrenal gave no gross evidence of change, microscopic examination demonstrated a considerable replacement of the medulla by neoplastic tissue.

Although the left adrenal gave microscopic evidence of involvement of the medulla by the neoplastic cells the slight change noted would suggest the primary tumor was elsewhere, possibly in the abdominal sympathetic nervous system. Some observers feel that the slight involvement of an organ does not necessarily indicate that the growth was not primary in that site.

Tumors of the embryonic types of cells derived from the sympathetic nervous system are relatively radioresistant and for that reason the therapeutic test may be of considerable diagnostic value as it was in this case in differentiating it from lymphoblastoma. The pathologist may encounter some difficulty in properly classifying the tissue submitted for examination. Embryonal tumors of the kidney, Wilms's tumor, may give a microscopic picture indistinguishable from sympathicoblastoma, but the

examination of sections taken from various parts of the tumor will give the differential picture of adenomyosarcoma. Wilms's tumor usually does not metastasize in the extensive manner of neuroblastoma. The small round-cell infiltration of aleukemic leukemia with its bone changes may occasionally confuse the examiner. The bone changes in Ewing's sarcoma usually appear in older children than those affected by sympathicoblastomas and respond ordinarily to Roentgen therapy in contrast to neuroblastomas which do not.

Wollstein, whose experience in the pathology of neuroblastoma in young children has been great, feels that the prognosis need not be hopeless if an early diagnosis is made and surgical removal of the tumor be attempted. Irradiation appears to be of little value except in the treatment of the more differentiated types of tumors and for diagnostic purposes.

#### BIBLIOGRAPHY

1. WRIGHT, J. H.: Neurocytoma or Neuroblastoma, a Kind of Tumor Not Generally Recognized. *J. Exper. M.*, 1910, 12, 556.
2. PEPPER, W., JR.: A Study of Congenital Sarcoma of the Liver and Suprarenals. *Amer. J. Med. Sci.*, 1901, 121, 287.
3. HUTCHISON, R.: On Suprarenal Sarcoma in Children with Metastases in the Skull. *Quart. J. Med.*, Oxford, 1907-08, 1, 33.
4. ASKIN, J. A., AND GESCHICKTER, C. F.: Neuroblastoma of Adrenal in Children. *J. Pediat.*, 1935, 7, 157.
5. STARTZ, I. S., AND ABRAMS, J.: Neuroblastoma: Childhood Type of Malignant Tumor of Sympathetic Nervous System. *Radiology*, 1938, 30, 232.
6. WRIGHT, F. H., AND PAIGE, B. H.: Neurogenic Tumors of the Sympathetic Nervous System in Children. *J. Pediat.*, 1939, 14, 137.
7. CUSHING, H., AND WOLBACH, S. B.: Transformation of Malignant Paravertebral Sympathicoblastoma into Benign Ganglioneuroma. *Am. J. Path.*, 1927, 3, 203.
8. LEHMAN, E. P.: Adrenal Neuroblastoma in Infancy—15-Year Survival. *Ann. Surg.*, 1932, 95, 473.
9. WOLLSTEIN, M.: Neuroblastoma of Adrenal in Young Children. *Surg., Gynec. Obst.*, 1928, 46, 774.

**Why Male Births Increase after War.** A theory offering an explanation for the definite increase in the proportion of male births following a long war is summarized in the July issue of *Hygeia, The Health Magazine*, from an article in the *Statistical Bulletin of the Metropolitan Life Insurance Company*.

The explanation says that when war breaks out the young male population is quickly drawn into service and that consequently the young women of the warring nations are largely

prevented from bearing children, either through the absence of their husbands or because no young bachelors are at home for them to marry. With the return of the young men from the war there is a marked increase in marriages and births, and thus a large proportion of the parents are the younger adults. Since the ratio of males to females at birth is higher when the mothers are young, it is only natural that the ratio of males shows a decided rise after a war.

# PRIMARY BLADDER CALCULUS IN A NINETY-THREE-YEAR-OLD FEMALE

EMMETT H. MARKWOOD, M.D., *Washington*

The occurrence of primary bladder calculi in women in this country is fairly rare. Most standard texts barely mention the condition. Keyes cites 2 cases in his practice and only 1 case in the experience of his father before him. Young does not mention the incidence of bladder calculi in women. E. Catherine Lewis, in her text, *Urology*, gives the incidence among women as 0.5 to 2 per cent.

Hinman states that primary calculus of the bladder in the United States is almost exclusively a disease of the male. When they occur in women it is usually in the form of an incrustation about a foreign body.

The symptomatology is based on the mechanical irritation of the stone. The more prominent symptoms are frequent and painful urination, heaviness in the hypogastrium or perineum, possible retention of urine while urinating in the upright position, and bloody urine.

The severity of the symptoms depends upon the size and surface configuration of the stone. It is surprising, however, how large a stone may become before it causes marked discomfort.

The following case of primary bladder calculus is interesting because it was present in a woman aged 93 years and because of the method of removal.

## REPORT OF CASE

G. B., a white female, aged 93 years, was first seen in October, 1937 with the complaint of urinary frequency accompanied by much pain. She urinated a very small amount every 5 minutes. By exerting pressure just to one side of the urinary orifice with her finger she was able to release more urine. The blood pressure was 126/40. The heart and lungs were normal consistent

with the age. There was senile emaciation. The urine showed a trace of albumen in the filtered specimen, four-plus pus, and red blood cells. It was very cloudy and had a specific gravity of 1.022 and an acid reaction.

In using a glass catheter to obtain the urine a stony hard object was felt just upon entering the bladder. The diagnosis of stone was made and then confirmed by X-ray. The family of the patient did not wish surgical treatment because of the patient's age. The bladder was irrigated and the patient instructed to urinate in the supine position. This gave some relief but after several weeks the symptoms returned with increased severity and with gross hematuria. The agony of the patient was so extreme that the family finally consented to the operation.

Due to prejudice of hospitals and the mental state of the patient the operative procedure was carried out in the home. Local infiltration anesthesia was used. A metal sound was placed in the bladder through the urethra and used as a guide and as a medium of resistance to cut down in order to enter the bladder at the proper place. The vesicovaginal septum was incised just posterior to the urethra, staggering the various layers as they were encountered. Very little hemorrhage occurred. The index finger was introduced into the bladder through the incision and the stone was soon located. With the finger used as a guide, a ring forceps was used to grasp the stone and it was then easily withdrawn. Closure of the incision was accomplished with care being taken that the suture lines did not overlap each other. A retention catheter was left in place for 3 days. The recovery was uneventful and the patient urinated easily upon withdrawal of the catheter. There has been no sign of a fistulous tract. The urine still contains gross pus.

The specimen was very rough on its surface. It weighed 14 grams. It measured 27 by 30 by 20 mm. It consisted of an outer white crust, 3 mm. thick, and an inner light brown core. The outer crust consisted chiefly of magnesium ammonium phosphate, a small amount of calcium phosphate and ammonium urate. The inner core consisted chiefly of calcium oxalate with some calcium phosphate. Cholesterol was also present.

**Immediate and Accurate Examination Needed to Diagnose Lung Cancer.** Cancer of the lung, which may masquerade as an inflammatory condition of this organ, requires immediate and exact examination by every diagnostic means available, Emile Holman, M.D., and P. Pierson, M.D., San Francisco, declare in *The Journal of the American Medical Association* for July 8.

They report six cases which illustrate their point that cancer of the lung may mimic a pus-discharging condition. Any long unresolved pneumonia or persistent discharge of pus that does not yield to the usual treatment should be considered a case of probable tumor of the lung until proved otherwise, they advise.

"The diagnosis of cancer of the lung," the authors state, "has increased

in the past twenty-five years from an incidence of 1 per cent to 10 per cent of all cancers."

They continue by pointing out that its manifestations are varied and depend entirely on its location in the rather extensive lung area. When certain of the sympathetic nerves are involved, the most frequent symptom is cough, which follows the origin in or the invasion of the bronchial tree and is soon followed by blood-streaked sputum. Any persistent cough demands an X-ray examination, as does also the appearance of bloody sputum.

"Recent advances in surgical procedures have made removal of a lung or a lobe of it successful and therefore imperative, whenever possible, in the care of tumors of the lungs," the authors declare.



JOHN HUGH LYONS, M.D., M.S. (IN SURG.)  
*President, The Medical Society of the District of Columbia, 1939-1940*



# MEDICAL ANNALS

of the

## DISTRICT OF COLUMBIA

*Editorial Office, 1718 M Street, N. W.*

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### TO MEMBERS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA:

The coming year is a year of opportunity for our Medical Society. In the past few years many difficult problems have arisen for the Society to solve, and they have been handled to the best of our ability, at times with imperfect facilities. This year with an increased membership and better organization, we are in a more favorable position to attain the objectives for which we are chartered, namely, "the promotion of the science and art of medicine and sanitation and the common interests of (the Society's) members and the public."

Every effort will be made to promote the science and art of medicine through our Wednesday evening meetings, and undoubtedly the weekly scientific programs will compare favorably with those in the past. The change in the date of the Annual Scientific Assembly from April to October, 1940 promises likelihood of better weather, better hotel accommodations and better attendance.

We have a great opportunity to be of service in the field of public health. While health conditions in this country are better than in Europe, organized medicine has recently had a great deal of unfavorable criticism heaped upon it. It has been held at fault because a portion of our population has failed to receive necessary medical attention and because illness imposes a heavy

financial burden on many of our people. It has been held responsible also because the incidence of venereal disease, tuberculosis and mental disease is what it is, and because of the maternal and infant mortality rates. Most of this criticism has come from proponents of socialized medicine and was not given in a constructive spirit. Nevertheless, it might be advisable for our Society to give this criticism serious consideration, and decide whether or not we could render public service by any action we might take in these matters.

Our recently organized Mutual Health Service affords a definite opportunity for rendering public service. Through this agency people of low incomes will be able to spread the cost of illness over a long period of time and in this way lighten the financial burden which otherwise might be very heavy at times. While this plan is of necessity somewhat experimental in nature, it is the result of a great deal of serious thought and hard work and should be practicable. If it is as successful as is hoped, it will be a strong practical refutation of a recent statement by an eminent advocate of socialized medicine that "voluntary insurance schemes" initiated by medical societies are not health insurance plans but fee insurance plans.

JOHN HUGH LYONS, M.D.

### JOHN HUGH LYONS, M.D., M.S. (IN SURG.)

Dr. John Hugh Lyons, the seventy-third President of The Medical Society of the District of Columbia, assumed office on July 1, 1939. Dr. Lyons was born in Washington, D. C., on October 25, 1890, the son of John E. and Annie Stewart Lyons. He was educated in the public schools of Washington, graduating from Central High School. He received his degree of Doctor of Medicine at George Washington University School of Medicine in 1918, and in 1919, the degree of Bachelor of Science.

Following his graduation from George Washington University School of Medicine, he interned at Emergency Hospital. Upon the termination of his internship Dr. Lyons left Wash-

ington to do postgraduate work at the Mayo Clinic, where he was located from 1919 to 1924. He received the degree of Master of Science in Surgery at the University of Minnesota in 1923.

Dr. Lyons is on the staff of several hospitals. He is Associate Surgeon at Emergency Hospital and Attending Surgeon at Children's Hospital. He is also Assistant Professor of Surgery at George Washington University School of Medicine.

Dr. Lyons has served the Society in various capacities. He served on the Membership Committee in 1929-30; on the Committee on Hospitals in 1930-31 and 1934-36; on the Civic Health Committee in 1931-32; as Chairman of the Committee on Public Information in 1933-34 and ex officio member of the Executive Committee the same year; on the Legislative Committee for two years, 1936-38; and on the Nominating Committee in 1937.

For the past year as President-elect of the Society, he has been a member of the Executive Board, where he has been diligent in his attendance and intensely interested in all Society affairs.

Mrs. Lyons is the former Grace Estelle Sorg of Richmond, Virginia. Dr. and Mrs. Lyons have three children, John H., Jr., Joan, and Joseph Stewart.

Dr. Lyons becomes President of the Society in one of the most important years of its existence. Those who know him intimately have the utmost confidence in his ability to carry on even under the most difficult conditions, for Dr. Lyons is a man of courage and character. The Society is fortunate to have him as its leader.

#### AN OPPORTUNITY FOR PUBLIC SERVICE

The complaint is often heard that the public has no way of obtaining reliable information about physicians. Particularly is this true in large metropolitan centers where there is a shifting population. Strangers, it is contended, are frequently victims of unscrupulous practitioners who have no professional standing.

In a number of cities medical organizations have met this criticism in a practical manner. Telephone secretarial bureaus operating twenty-four hours a day have been established whose function it is to transmit calls from patient to physician when the doctor is not in his office. Not only are calls relayed but appointments are made according to the physician's instruction.

In addition, these bureaus provide reliable information about practitioners in the community. For example, where inquirers request names of family physicians, these are provided from a list in rotation. Three names are always given. Where names of specialists are requested, these are furnished in the same manner except where the inquirer has a family physician. In this event he is urged to seek the advice of his doctor.

Although this information has for some time been given the public at the Medical Society's office, facilities for doing so have been inadequate. In the first place, classification of members according to type of practice is incomplete. Too, there is no telephone service during evening and night hours.

The desirability of establishing a telephone secretarial bureau has been suggested by several of our members. As these bureaus are supported by monthly fees of subscribing physicians it must be ascertained whether a sufficient number will subscribe. To ascertain the interest of the local profession, an inquiry is being directed to the membership by the Executive Board. Enclosed with this inquiry is a questionnaire to be completed by Society members, indicating the type of practice in which they are engaged. As soon as returns are received, classification will be completed for the use of the Medical Society's office and, if established, the telephone secretarial bureau. It will also be made available to MUTUAL HEALTH SERVICE.

It is hoped that there will be enthusiasm for a telephone secretarial bureau. Such a bureau will not only be of great service to the public but to the medical profession as well. It will

establish the Society as a source of reliable medical information.

### PERTINENT PARAGRAPHS

Copies of the Summary Report presented at the Annual Business Meeting of the Society on May 3, 1939, are available at the Medical Society's office. The report will not be published in the MEDICAL ANNALS.

Mr. Paul Foley, Assistant Secretary of the Commission on Licensure, who has conducted investigations and prosecutions of persons violating the Healing Arts Practice Act, has been commended by the Society's Executive Board for his excellent work. Mr. Foley has made an outstanding record which the Board feels is deserving of the highest praise.

A Committee on Radio Programs was authorized by the Executive Board at its last meeting, subject to the approval of the Society at its first meeting in October.

In establishing this committee, the Board confirmed the appointment of the following members: Dr. R. Lyman Sexton, Chairman; Drs. Karl Dortzbach, Ralph J. Haws, Clayton B. Ethridge, Darrell C. Crain, Jr., Fred A. J. Geier, and Don S. Knowlton.

Two excellent publications have just been issued by the Bureau of Medical Economics of the American Medical Association under the titles, "Organized Payments for Medical Services" and "Factual Data on Medical Economics." The former describes the manner in which state and county medical societies throughout the country are meeting economic and social problems of medicine. It contains valuable information about new methods of medical practice which has been assembled not only for the physician but for the general public. "Factual Data on Medical Economics" is a pamphlet devoted to a survey of health conditions and also contains other information of value to anyone interested in this subject.

### PERSONNEL OF COMMITTEES 1939-1940

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## TRANSACTIONS OF THE WASHINGTON SOCIETY OF PATHOLOGISTS

The meeting of the Washington Society of Pathologists was called to order by the President, Dr. J. W. Lindsay, at 1:45 p. m., Saturday, May 6, 1939 in the Army Medical Museum. There were 25 members and 2 guests present.

The following officers were unanimously elected for the year 1939-40:

Dr. H. E. Ragle, President; Dr. Vincent J. Dardinski, Vice President; Lt. Col. V. H. Cornell, Secretary; Dr. R. D. Lillie, 2-year Councillor; Dr. J. W. Lindsay, 1-year Councillor.

## Presentation of Cases

**Dr. R. M. Choisser** presented slides from the case of a diabetic woman 60 years of age, who had enlarged lymph-glands of her axillae and inguinal regions. Pelvic examination revealed a "frozen pelvis" thought to be carcinoma. The patient was ambulant and very happy and jovial. Her blood NPN was 190 mg. per cent creatinin 6 mg. She went home and on arriving there went into coma and died very shortly. Necropsy revealed massive enlargement of all retroperitoneal and mesenteric lymph-nodes extending into the diaphragm and around the thoracic duct, and felt as nodules throughout the parietal pleura. The liver was almost completely replaced with neoplastic nodules, and there was almost no kidney structure. A large nodule was found in the spleen. A tentative diagnosis of lymphosarcoma was made.

**Dr. H. H. Leffler** presented 25 microscopic slides from a colored man, 70 years of age, who entered Gallinger Hospital on March third. This patient was so mentally confused that he could give no history at all. He was completely disoriented as to time and place, but he did recognize people for a few minutes. The chief complaint was of a growth taking place near the inner aspect of the right orbit in the region of the tear duct. The right eye had been removed. Besides a growth in the region of the right orbit he also had a mass filling the right nostril and projecting slightly from it. Apparently he had a growth filling the right nostril, possibly the

right antrum and also extending out through the tear sac. His general condition was grave. Numerous giant cells were present in the biopsy tissue, but there was a possibility of vascular endothelioma, the most common type of tumor around the nose. Some of the mental symptoms might have been due to the tumor growing back into the brain. Whether it was benign or malignant was not settled. Giant cell tumor was the most favored diagnosis.

**Dr. R. D. Lillie** presented microscopic slides from a *Macaca rhesus*, about 2 years old, who died of acute disseminated tuberculosis. At autopsy the mucosa of the colon was irregularly swollen and reddened and the sections of colon were presented for diagnosis. Microscopic sections showed the presence of *Balantidium coli*.

**Dr. H. L. Wollenweber** presented microscopic slides from the case of a white man, aged 48, a sheet metal worker. His chief complaint was pain in the left side and high fever. For 12 to 14 years he had had cramps and slight shooting pains in his left upper quadrant, approximately every month. He had seen doctors about this but had been told "there is nothing in the left side to worry about." The first serious attack of pain had occurred 2 years before when he was confined to bed for 2 weeks. At this time the doctor was called in and treated him for gas. He recovered from this and he had 2 or 3 attacks of a slight nature but did not require medical attention until May 1938 when he again had a severe attack and was taken to the hospital where no particular treatment was given him other than the administration of quinine. He was told he had a large spleen. Since then he has had 1 or 2 mild attacks and has taken quinine with relief. On December 30 he had very severe pains in his left upper quadrant and vomiting. A doctor was again called and again prescribed quinine, which reduced his fever from 102°F. where it had been for 5 days. Splenectomy was performed, January 31, 1939. The spleen weighed 3,230 grams, together with 2 accessory spleens. The liver was slightly enlarged and looked hobnailed. Blood examination showed 2 per cent myelocytes, 2 per cent megablasts, 4 per cent monocytes, and 1 per cent eosinophiles. The microscopic sections showed lymphosarcoma.

**Dr. Thomas Peery** presented 25 microscopic slides from a 45-year-old colored man who noticed a swelling of the ab-

domen and marked weakness and moderate constipation for 6 weeks before hospital admission. On examination nothing important was noted except in the abdomen. The right side of the abdomen was prominent and with marked resistance to palpation throughout but no definite masses. Laboratory procedures were generally negative except for anemia. Two weeks later an exploratory laparotomy was done. There was bloody fluid in the abdominal cavity and much necrotic tissue was noted anteriorly, but the nature of the disease could not be identified except that it was thought to be neoplastic. At autopsy the essential features were confined to the abdomen where there was a very large flat mass, apparently filling the whole omentum. The microscopic slides showed sarcoma, perhaps a liposarcoma.

**Dr. Oscar B. Hunter** presented 25 microscopic slides and the gross specimen from a white man, aged 73, who weighed about 150 lbs. The patient entered the hospital April 2, 1939 complaining of a sensation of heaviness in the abdomen. This sensation had been present to the patient's knowledge for approximately 4 and a half months. He was conscious of a mass in the left upper quadrant which he was sure had doubled in size during the last month of his complaint.

Intravenous pyelograms revealed slight ptosis of the right kidney with moderate hydronephrosis of the left kidney and upper third of the ureter. Laboratory data: Wassermann and Kahn tests were negative; the urinalysis was negative; the hemoglobin was 72 per cent; erythrocytes numbered 3,830,000; and there were 13,500 white cells with 31 polys, 63 lymphocytes, 2 monocytes, 2 eosinophiles and 1 basophile.

On April 5, 1939 an exploratory laparotomy was performed at which time a large spleen weighing 1850 grams was removed. No other specific gross changes were noted in the abdomen at this time. The patient's post-operative condition was quite satisfactory and uneventful. He was discharged April 26, 1939, recovered. Since the time of his discharge the patient has had no complaints other than that of a chronic bronchitis which appears to be an entirely separate process. Large pale follicles were prominent on the cut surface of the spleen. Microscopic sections showed giant follicular hyperplasia, resembling Brill-Symmers disease.

The meeting adjourned at 3:15 p. m.

## MUTUAL HEALTH SERVICE BEGINS OPERATION JULY 1

After several weeks of strenuous effort, the Board of Trustees of MUTUAL HEALTH SERVICE announced that solicitation of subscribers would begin July 1, 1939. The Board has held one to two meetings a week. These have not been perfunctory sessions but have involved many hours of intensive effort. In the course of these meetings, important matters have been disposed of, among them the development of the subscriber's application, medical service contract and other necessary forms.

Members of the Board are: Dr. Henry R. Schreiber, Chairman; Drs. Harry F. Dowling, A. Clagett Gray, William P. Herbst, Kate B. Karpeles, Thomas E. Mattingly, Luther H. Reichelderfer, Arch L. Riddick, and Mr. Theodore Wiprud, Secretary and ex officio member. In addition to Board members the following have been in attendance at meetings: Mr. Hugh G. Buhrman, Administrator, and Messrs. Charles S. Baker and Warren E. Magee, legal counsel.



Temporary quarters have been opened in the Medical Society's building on the third floor. After September 1, 1939, however, the SERVICE will move into permanent quarters at 1710 M Street, N. W.

Queries which have been received at the Society's Office indicate that a number of questions have arisen in the minds of Society members in regard to the manner in which MUTUAL HEALTH SERVICE will operate. The following questions and answers have been prepared with a view to clearing up any misunderstandings which may exist:

Q. Is it too late for me to sign an agreement to participate in the SERVICE?

A. No, it is not. A physician's agreement will be provided any Society member who makes a request by letter or by telephone. If by telephone, the member should call Mr. HUGH BUHRMAN, Administrator of the SERVICE, at REPUBLIC 0500.

The goal of the SERVICE is to have every member of the Medical Society participate.

Q. Will subscribers be accepted individually or in groups?

A. Subscribers will be accepted only in groups of 10 or more. Article X of the Constitution and By-laws of MUTUAL HEALTH SERVICE provides:

"Sec. 2. Subscribers must apply in groups of not less than ten.

"Sec. 3. If there are not a sufficient number of employed persons in any firm, corporation, association, establishment, unit or division in any department of the District of Columbia or National Government to provide a group of ten, combinations may be formed from other business groups to make up the required number . . ."

Q. How will the subscriber choose his physician?

A. It was originally intended that the list of participating physicians should be circulated among subscribers. After considerable thought it was decided that the publication of such a list would be inadvisable for the reason that MUTUAL HEALTH SERVICE contemplates that every subscriber must have a "family physician" and when in need of special services which the "family physician" himself is not qualified to render must be referred to a specialist with the approval of the Medical Service Committee.

A "family physician" is defined as any physician selected by the subscriber as his medical adviser, and who has agreed to participate in the Service.

Q. How will I be paid for my services?

A. Participating physicians will be provided with forms on which to bill MUTUAL HEALTH SERVICE for their services and to record facts in regard to diagnosis and treatment. It is important for physicians to keep in mind that bills for services and reports must be returned not later than thirty days after the last treatment rendered in any illness; otherwise, payment will be withheld pending investigation of failure to report within the required time. All bills for services will be reviewed by the Medical Service Committee and will be paid upon its authorization.

Q. What procedure will be followed in the event payment of my bill is delayed?

A. The Medical Service Committee will notify the participating physician that it desires to confer with him relative to the bill which he has submitted.

Q. How are the preliminary charges against subscribers to be handled?

A. According to the Constitution and By-laws, all payment for services will be made to the SERVICE. This includes the initial amount up to \$6.00 which the subscriber must pay for the first medical services in any one year, before he is entitled to the medical care provided by the SERVICE. The above rule also applies to preliminary payments which must be made by husband and wife, or wife or dependents.

Q. What is the procedure when a subscriber is in need of special services?

A. Special services such as provided by X-Ray and pathological laboratories, and rendered by specialists, are not available to subscribers unless authorized by the Medical Service Committee. Where recommended by the "family physician" approval by the Chairman of the Medical Service Committee is necessary. This will not be required in an emergency.

Q. Do the services provided by MUTUAL HEALTH SERVICE and GROUP HOSPITALIZATION, INC. overlap?

A. No, they do not. MUTUAL HEALTH SERVICE furnishes medical and surgical services only, while GROUP HOSPITALIZATION confines itself to hospitalization.

Q. How will I ascertain who are entitled to medical care supplied by the SERVICE?

A. Each subscriber will carry an Identification Card which bears the name of the "family physician." Previous to issuing this card the "family physician" will indicate that the subscriber is acceptable to him as a patient. The card will also bear the names of the dependents who are entitled to medical services.



Q. In the event the "family physician" is not available, to whom does the subscriber go for medical services?

A. The subscriber may go to a physician of his own choice, or to one recommended by the "family physician."

Q. What diseases are excluded from treatment?

A. Diseases excluded are: mental illness, epilepsy, feeble-mindedness, pulmonary tuberculosis, syphilis, gonorrhea, chancroid, alcoholism, and narcotic drug addiction.

Q. Are there any other exclusions?

A. Yes, disabilities for which treatment is provided or which are compensable under the United States Compensation Act and the Workmen's Compensation Act of the District of Columbia.

Q. Has the fee schedule been completed?

A. No. However, it is about complete, and mimeographed copies will be forwarded to each participating physician within a short time.

Q. What is the purpose of the provision in the Constitution and By-laws authorizing the reduction of medical bills?

A. Article XIII, Sec. 1 of the Constitution and By-laws reads as follows:

"To insure that the SERVICE will be financially self-sustaining, it is also proposed that costs necessary for operation shall be the minimum consistent with good service and administration. Physicians participating will be required to agree to deductions of from twenty to forty per cent of their fees during the experimental period for the purpose of maintaining a sufficient cash reserve. It is proposed to refund these deductions as soon as it is financially possible."

Undoubtedly many other questions will arise in the minds of participating physicians. If so, they should forward them to the office of MUTUAL HEALTH SERVICE where they will receive prompt attention.

As it is exceedingly important that members of the Society familiarize themselves with the details of operation of the SERVICE, a communication will go forward within the next few days from the President of MUTUAL HEALTH SERVICE, together with copies of the subscriber's application and Medical Service Certificate. These should be read carefully so that members participating in the SERVICE will be familiar with all of the rules regulating the provision of medical care to subscribers.

## NEWS AND PERSONALS

**The 68th Annual Meeting of the American Public Health Association** will be held in Pittsburgh, Pa., October 17-20, 1939, with headquarters at the William Penn Hotel. Detailed information regarding the meeting may be obtained from Dr. I. Hope Alexander, Director of Health of Pittsburgh, who is chairman of the local committee.

The ceremony of breaking ground for the erection of the new **Naval Medical Center** took place June 29. Rear Admiral Perceval S. Rossiter, retired Surgeon General of the Navy, assisted by Rear Admiral Ross T. McIntire, Surgeon General and Chief of the Navy Bureau of Medicine and Surgery, turned the first spadeful of earth, beginning construction of the \$4,850,000 project.

The Center will be located on Rockville Pike near Bethesda, Md., and will include a medical school, dental school, research facilities and a hospital of 500 beds, capable of expansion in war time to 1,000 beds. It will replace the present medical center at Twenty-third and E Streets, Northwest.

Charles Edison, Assistant Secretary of the Navy, who spoke at the ceremony, predicted that the Center will become "the finest establishment in the world for the teaching and practice of military medicine."

**The third annual diabetic camp for children** will be held at the Christ Child Farm for Convalescent Children, Rockville, Maryland, during the month of August. White diabetic children of limited means, 6 to 12 years of age, are eligible. They will be under the supervision of physicians and nurses experienced in the treatment of diabetes mellitus.

For application blanks, apply to Dr. Robert A. Bier, Attending Physician, Christ Child Farm for Convalescent Children, 3800 Harrison Street, N. W.

**The Section on Ophthalmology, Otology, Rhinology and Laryngology** has elected the following officers for 1939-40:

Dr. Jeter C. Bradley, *Chairman*; Dr. Edward J. Cummings, *Vice Chairman*; Dr. P. S. Constantinople, *Secretary*; Dr. John H. Trinder, *Treasurer*.

**The Section on Neurology and Psychiatry** has elected the following officers for the coming year:

Dr. Antoine Schneider, *Chairman*; Dr. Tomas Cajigas, *Vice Chairman*; Dr. Lester Neuman, *Secretary-Treasurer*.

**The Section on Pediatrics** has elected the following officers for 1939-40:

Dr. Harry A. Ong, *Chairman*; Dr. Edgar P. Copeland *Vice Chairman*; Dr. William F. Burdick, *Secretary-Treasurer*.

**The Woman's Auxiliary to the Medical Society** has announced the following committee chairmen for 1939-40:

Mrs. Cline N. Chipman, *Education*; Mrs. Fred A. J. Geier, *Finance*; Mrs. William J. B. Orr, *House*; Mrs. Harry F. Anderson, *Hygeia*; Mrs. R. Lomax Wells, *Membership*; Mrs. J. O. Warfield, *Philanthropic*; Mrs. William T. Gill, Jr., *Program*; Mrs. Beveridge Miller, *Publicity*; Mrs. Walter Atkinson, *Public Relations*; Mrs. Thomas Neill, *Social*; Mrs. L. Brison Norris, *Ways and Means*.

Mrs. James G. Cumming has been appointed to serve as Parliamentarian.

**Dr. Francis Randall Hagner**, completing 45 years' service on the medical faculty of **George Washington University**, was one of seven retiring professors of the University who were honored at the annual meeting of the General Alumni Association June 12, 1939. Dr. Hagner, who is a Life Member of the Medical Society, has won national recognition for his work on genito-urinary surgery.

**Dr. Leslie H. French** was named vice president of the Alumni Association for the School of Medicine at the business session.

**Dr. William Thornwall Davis** participated in the meetings of the West Virginia State Medical Association in White Sulphur Springs, West Virginia, July 10. He spoke before the Eye Section on the subject, "Ocular Motor Anomalies," and addressed the general assembly on the subject, "Ocular Headaches."

On July 24 Dr. Davis will be one of the guest lecturers in the postgraduate course in ophthalmology of the University of Rochester School of Medicine in Rochester, New York. He will give two lectures entitled "Ocular Muscle Disturbances" and "Orthoptic Training."

**Dr. B. Edwin Erikson** has been appointed Chairman of the Committee on Orthodontics for the District of Columbia Dental Society. This committee is to coöperate with the Academy of Pedi-

atrics in preparation for their meeting in Washington next April.

#### PRESIDENT URGES SUPPORT OF RED CROSS

The Annual Roll Call in the District of Columbia Chapter of the American Red Cross begins this year on September 28 and runs through October 19. I feel that the Doctors' Unit, which is one of the strongest divisions, numerically, of the Professional Group, should do everything possible to make the Roll Call a success. This means that members of our profession should be members of the Red Cross and thus have a part in the great work done by that organization.

As President of the Medical Society, I personally want to urge each member to join the Red Cross so that the Doctors' Unit may go over 100 per cent strong.

JOHN HUGH LYONS, M.D.

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#### Lászlo Detre, M.D.

(1876-1939)

Dr. Laszlo Detre, Senior Immunologist with the United States Public Health Service since 1932, died May 26, 1939, at his home, 3700 Massachusetts Avenue, at the age of 63 years. Dr. Detre did some of the early work on the complement fixation test for syphilis and was founder of the Hungarian Serum Institute, with branches in Barcelona, Warsaw and Vienna. He held degrees from the Universities of Budapest and Paris and was a member of the Pasteur Institute. Dr. Detre was also former professor of bacteriology at the University of Budapest and head of public health for the Austro-Hungarian Army from 1914 to 1918. He was decorated six times, particularly with reference to eliminating typhoid and cholera from the prison camps.

Dr. Detre was born in Budapest, Hungary, in 1876. He already had a wide reputation in Europe when he came to Washington in 1908 as a representative of the Austro-Hungarian government to an international tuberculosis congress. While here he married Miss Lillian Coblenzer of Washington, who survives him. Two children also survive, Miss Doris Detre and Mrs. Morris Cafritz, both of Washington.

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# MEDICAL ANNALS

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### SUPERVISED OBSTETRICS IN A GENERAL HOSPITAL\*

A REVIEW OF OBSTETRICS, GARFIELD MEMORIAL HOSPITAL, 1938

ROBERT B. NELSON, JR., M.D., *Washington*

While the majority of hospital confinements in this country are conducted in general hospitals, practically all published statistical data on obstetrics come from lying-in hospitals or from those in which the staff is limited to men who have specialized in this field. Although in the last few years a number of hospitals in smaller cities have made obstetrical reports, it is still a regrettable fact that so little accurate data from larger general nonteaching hospitals are available, because much valuable material goes unrecorded and thus no authentic answer can be made to adverse criticism by an uninformed lay press in regard to obstetrics in the general hospital. Reports by Fox<sup>1</sup> and Hauch<sup>2</sup> are among the few of this type. The former, in his article, expressed the hope that it might stimulate other general hospitals to come forward with similar reports so that "the public or, at least, the medical profession, may be informed as to just how their community hospital stands in regard to maternity work." The following report on the obstetrical work at Garfield Memorial Hospital is in line with this purpose.

A few words on obstetrical conditions here are in order. Except for the fact that cesarian

sections are performed in the general operating rooms, the maternity division, comprising 72 of the hospital's 387 beds, is entirely separated from the other services. The delivery floor, with four labor rooms, five delivery rooms, utility and scrub rooms, is staffed by competent and well supervised nurses. Sleeping quarters for private physicians attending cases are adjacent to the delivery floor.

At present 153 physicians enjoy the use of these facilities. Three grades of courtesy privileges are extended to these men. Those of group 1 are allowed to deliver normal cases, using outlet forceps and perineotomy if desirable; those of group 2 are allowed to handle complicated cases in consultation with members of group 3, who enjoy full privileges. The service cases are under the care of a full-time resident who is responsible to a visiting staff composed of four senior and four junior associates, each serving three months of the year. Approximately one half of the deliveries are conducted by specialists, one fourth by general practitioners and one fourth by the house staff (table 1).

All cases in the second half of gestation are admitted for obstetrical conditions on the maternity service. Patients prior to four and

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\* Read before the monthly conference of the Garfield Memorial Hospital, February 15, 1939.



TABLE 1

|                                                     |           |
|-----------------------------------------------------|-----------|
| Garfield Memorial Hospital—Total beds.....          | 387       |
| Year 1938—Obstetrical beds.....                     | 72        |
| Total cases delivered.....                          | 1,414     |
| Twins.....                                          | 9         |
| Parity:                                             |           |
| Primiparae.....                                     | 747       |
| Multiparae.....                                     | 667       |
| Color of Patients:                                  |           |
| White.....                                          | 1,161     |
| Colored.....                                        | 253       |
| Status of Patients:                                 |           |
| Private.....                                        | 1,069     |
| Service.....                                        | 345       |
| White.....                                          | 92        |
| Colored.....                                        | 253       |
| Total private physicians attending cases, 1938..... | 106       |
| Specialists.....                                    | 26        |
| General practitioners.....                          | 80        |
| Cases delivered by specialists.....                 | 667 (47%) |
| Cases delivered by general practitioners.....       | 402 (28%) |
| Cases delivered by house staff.....                 | 345 (24%) |

TABLE 2

|                                |       |
|--------------------------------|-------|
| Total presentations, 1938..... | 1,423 |
| Cephalic.....                  | 1,346 |
| Breech.....                    | 75    |
| Transverse.....                | 2     |
| Placenta:                      |       |
| Praevia.....                   | 5     |
| Premature separation.....      | 3     |
| Toxemia:                       |       |
| Preëclamptic.....              | 30    |
| Eclamptic.....                 | 1     |
| Nephritic.....                 | 2     |
| Babies:                        |       |
| Total.....                     | 1,423 |
| Twins.....                     | 9     |
| Term.....                      | 1,342 |
| Premature.....                 | 64    |
| Living.....                    | 54    |
| Died.....                      | 10    |
| Congenitally abnormal.....     | 4     |
| Well formed.....               | 6     |
| Previable.....                 | 17    |

TABLE 3

| METHODS OF DELIVERY                                               | CASES OF MATERNAL MORBIDITY | VIABLE BABIES LOST | BABIES LOST WITH CONGENITAL ABNORMALITIES, ETC. | BABIES LOST UNDER 1500 GRAMS | MATERNAL DEATHS | TOTAL NO. OF CASES |
|-------------------------------------------------------------------|-----------------------------|--------------------|-------------------------------------------------|------------------------------|-----------------|--------------------|
| Occiput anterior presentations.....                               |                             |                    |                                                 |                              |                 | 976                |
| Vertex, normal delivery.....                                      | 16                          | 3                  | 2                                               | 6                            |                 | 270                |
| Vertex, normal delivery with perineotomy.....                     | 4                           | 1                  |                                                 | 1                            |                 | 84                 |
| Vertex, forceps delivery.....                                     | 6                           | 1                  |                                                 |                              |                 | 108                |
| Vertex, forceps and perineotomy.....                              | 44                          | 4                  | 3                                               |                              |                 | 480                |
| Vertex, by version.....                                           |                             |                    | 2                                               | 1                            |                 | 7                  |
| Vertex, by cesarean section.....                                  | 6                           | 3                  |                                                 | 1                            | 2               | 27                 |
| Occiput transverse and posterior presentations.....               |                             |                    |                                                 |                              |                 | 367                |
| Spontaneous rotation and delivery.....                            | 2                           |                    | 1                                               |                              |                 | 35                 |
| Spontaneous rotation and perineotomy.....                         | 4                           |                    |                                                 |                              |                 | 9                  |
| Spontaneous rotation and forceps.....                             |                             |                    |                                                 |                              |                 | 13                 |
| Spontaneous rotation, forceps and perineotomy.....                | 13                          |                    | 1                                               |                              |                 | 107                |
| Manual rotation, normal delivery.....                             |                             |                    |                                                 |                              |                 | 1                  |
| Manual rotation and forceps.....                                  | 2                           |                    |                                                 |                              |                 | 11                 |
| Manual rotation, forceps and perineotomy.....                     | 8                           | 3                  |                                                 |                              |                 | 42                 |
| Forceps rotation and delivery.....                                |                             |                    |                                                 |                              |                 | 6                  |
| Forceps rotation and perineotomy.....                             |                             | 1                  | 1                                               |                              |                 | 63                 |
| Scanzoni.....                                                     | 4                           |                    |                                                 |                              |                 | 9                  |
| Scanzoni and perineotomy.....                                     | 7                           | 1                  |                                                 |                              |                 | 36                 |
| Unrotated, spontaneous delivery.....                              |                             |                    |                                                 |                              |                 | 1                  |
| Unrotated, forceps delivery.....                                  |                             |                    |                                                 |                              |                 | 3                  |
| Unrotated, forceps and perineotomy.....                           | 1                           | 1                  |                                                 |                              |                 | 16                 |
| Version.....                                                      |                             | 1                  |                                                 |                              |                 | 6                  |
| Cesarean section.....                                             | 4                           |                    |                                                 |                              |                 | 9                  |
| Transverse presentations.....                                     |                             | 1                  |                                                 |                              |                 | 2                  |
| Undiagnosed, normal delivery.....                                 |                             |                    |                                                 | 2                            |                 | 3                  |
| Breech presentations.....                                         |                             |                    |                                                 |                              |                 | 75                 |
| Frank breech, breech extraction.....                              |                             |                    |                                                 | 2                            |                 | 13                 |
| Frank breech, breech extraction with perineotomy.....             |                             |                    |                                                 |                              |                 | 5                  |
| Frank breech, breech extraction with forceps.....                 |                             |                    |                                                 |                              |                 | 1                  |
| Frank breech, breech extraction with forceps and perineotomy..... | 2                           | 1                  |                                                 |                              |                 | 11                 |
| Frank breech, one foot pulled down.....                           |                             |                    |                                                 | 1                            |                 | 2                  |

one-half months of pregnancy are admitted on the gynecologic service. Tables 1 and 2 are self-explanatory.

Table 3 shows the methods of delivery used

TABLE 3—*Concluded*

| METHODS OF DELIVERY                                                   | CASES OF MATERNAL MORBIDITY | VIABLE BABIES LOST | BABIES LOST WITH CONGENITAL ABNORMALITIES, ETC. | BABIES LOST UNDER 1500 GRAMS | MATERNAL DEATHS | TOTAL NO. OF CASES |
|-----------------------------------------------------------------------|-----------------------------|--------------------|-------------------------------------------------|------------------------------|-----------------|--------------------|
| Frank breech, one foot pulled down with perineotomy.....              |                             |                    |                                                 |                              |                 | 3                  |
| Frank breech, one foot pulled down with perineotomy and forceps.....  |                             |                    |                                                 |                              |                 | 3                  |
| Frank breech, both feet pulled down.....                              |                             |                    |                                                 |                              |                 | 0                  |
| Frank breech, both feet pulled down with perineotomy.....             |                             |                    |                                                 |                              |                 | 3                  |
| Frank breech, both feet pulled down with perineotomy and forceps..... |                             |                    |                                                 |                              |                 | 10                 |
| Frank breech, by cesarean.....                                        |                             |                    |                                                 |                              |                 | 2                  |
| Footling breech, one foot pulled down.....                            |                             |                    |                                                 |                              |                 | 1                  |
| Footling breech, one foot pulled down, perineotomy.....               |                             |                    |                                                 |                              |                 | 1                  |
| Footling breech, one foot pulled down, perineotomy and forceps.....   |                             |                    |                                                 |                              |                 | 3                  |
| Footling breech, both feet pulled down.....                           | 2                           |                    | 2                                               |                              |                 | 6                  |
| Footling breech, both feet pulled down, forceps.....                  |                             |                    |                                                 |                              |                 | 2                  |
| Footling breech, both feet pulled down, perineotomy.....              | 1                           |                    | 1                                               | 1                            |                 | 4                  |
| Footling breech, both feet pulled down, forceps, perineotomy....      | 1                           |                    |                                                 |                              |                 | 4                  |
| Breech, method unrecorded.....                                        |                             |                    |                                                 |                              |                 | 1                  |

with the cases of maternal mortality and morbidity, and the number of viable babies, congenitally abnormal babies and previable babies (weighing less than 1500 grams) lost for each group. A high percentage of forceps deliveries, 894 of the 1414 cases (63.2 per cent), is noticeable. This is due to the frequent use of forceps by the specialists and by the house staff. On the other hand, 2.7 per cent representing the percentage of cesarian sections is relatively low.

Two mothers, both of whom were private cases, on whom cesarian sections were performed did not survive their pregnancies. One developed a peritonitis and 1 died of post-operative shock, for which the cause was not clear. The mortality rate of 0.14 per cent thus

derived compares favorably with other hospitals (table 5).

One hundred twenty-seven cases had post-partum temperature elevations of 100.4°F. or more on two or more successive days not including the first. By this criterion, maternal morbidity was 8.9 per cent (private cases, 7.2 per cent; service, 14.5 per cent).

Table 4 shows fetal mortality with distribution in each group. The cases are not subdivided into stillbirth and neonatal deaths, since it seems of little practical importance whether the baby was born dead or died in a short time. Corrections in percentage for previable babies weighing less than 1500 grams is a recognized procedure. The last correction for congenital abnormalities, intercurrent disease and other strictly nonobstetrical causes of death is of interest in judging the obstetrical efficiency of the department. We feel that the 1.51 per cent thus derived reflects favorably on the service here. Of particular interest is the fetal mortality in the breech deliveries. Of the 75 breech presentations (table 3), 6 babies weighing less than 1500 grams were lost. Of the remain-

TABLE 4

| FETAL MORTALITY                                           | PER CENT |
|-----------------------------------------------------------|----------|
| Total fetal and neonatal mortality (49 cases).....        | 3.44     |
| Private.....                                              | 3.15     |
| Service.....                                              | 4.35     |
| Corrected for babies under 1500 grams.....                | 2.28     |
| Private.....                                              | 2.17     |
| Service.....                                              | 2.65     |
| Corrected for the above and congenital abnormalities..... |          |
| Intercurrent disease, etc.....                            | 1.51     |
| Private.....                                              | 1.54     |
| Service.....                                              | 1.49     |

ing 69 deliveries, 2 resulted in stillbirths to give a fetal mortality of 2.89 per cent. One of these exhibited congenital abnormalities incompatible with life. This produces a corrected mortality of 1.45 per cent. While this series is not large,

the mortality, remarkably low as compared with published statistics, merits attention.

While comparative statistics are admittedly deceptive, table 5 was compiled for the purpose of evaluating the results reported here. New York, Boston and Chicago Lying-in Hospitals are natural choices as examples of the larger maternity hospitals. West Suburban Hospital, Oak Park, Illinois, is given as an example of another general hospital in the same grouping as Garfield Memorial Hospital. It will be criticized, of course, because the years do not

patients are of the higher type of their race and are, of course, cared for in the prenatal clinic. A very high percentage of cases, therefore, have enjoyed prenatal care. Limitation of privileges by grouping attending physicians according to training is important. Careful supervision by the obstetrical committee, easy availability of expert opinion in consultation, and the excellent nursing service on the delivery floor are other factors which have considerable bearing on the results reported here. The fact that approximately one third of the obstetrical anesthetics

TABLE 5  
*Comparative mortality statistics*

| HOSPITAL               | MATERNAL               |       |        |          | FETAL            |              |                  |       |          | CESARIAN SECTIONS | PER CENT |
|------------------------|------------------------|-------|--------|----------|------------------|--------------|------------------|-------|----------|-------------------|----------|
|                        | Year                   | Cases | Deaths | Per cent | Babies delivered | Still births | Neo-natal deaths | Total | Per cent |                   |          |
| Boston Lying-in.....   | 1935                   | 2,728 | 10     | 0.36     | 2,762            | 69           | 68               | 137   | 4.9      | 116               | 4.25     |
| New York Lying-in..... | 1936                   | 2,653 | 6      | 0.22     | 2,688            | 77           | 33               | 110   | 4.1      | 96                | 3.6      |
| Chicago Lying-in.....  | 7-1-35<br>to<br>7-1-36 | 2,394 | 5      | 0.21     | 2,425            | 59           | 43               | 102   | 4.2      | 138               | 5.76     |
| West Suburban.....     | 1935-6                 | 2,338 | 7      | 0.29     | 2,368            | 61           | 40               | 101   | 4.3      | 51                | 2.2      |
| Garfield Hospital..... | 1938                   | 1,414 | 2      | 0.14     | 1,423            | 19           | 13               | 32    | 2.3      | 38                | 2.7      |

correspond and because the number of cases given for this hospital are less than the figures quoted from the other institutions. Acknowledging this, however, we feel that the relatively low maternal and fetal mortality as well as the low percentage of cesarian sections is significant.

Several factors are important in producing these results. The work is carried on in a well equipped obstetrical department almost entirely separated from the other services. About one half of the cases are delivered by specialists, whose patients are presumably of the upper financial status and who routinely receive adequate prenatal care. As practically all cases on the service pay something, even the colored

are given by men specializing in this field is also important.

#### CONCLUSION

While this report covers a period of only one year, it would seem to show clearly that first rate obstetrics can be practiced in a properly supervised general hospital.

#### BIBLIOGRAPHY

1. Fox, P. C.: Maternal and Fetal Mortality in a General Hospital, Where Majority of Obstetric Work Is Being Done by General Practitioners. *Am. J. Obst. & Gynec.*, 1938, 35, 1074.
2. HAUCH, C. D.: Analysis of Obstetric Material of the Evangelical Hospital of Chicago. *Am. J. Obst. & Gynec.*, 1938, 35, 1081.



## THE THERAPEUTIC USE OF IODIZED OIL IN CHRONIC BRONCHITIS AND BRONCHIECTASIS

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AND E. RAYMOND FENTON, M.D., *Instructor in Medicine, Georgetown*  
*University School of Medicine*

The treatment of chronic bronchitis and bronchiectasis has undergone no material change for many years and has not kept pace, in our opinion, with modern therapeutic measures in other branches of medicine. As we all know, the medical treatment has consisted of various cough medicines including iodides and creosote and different forms of medicated inhalations. Stock and autogenous vaccines have been used, and heliotherapy has been practiced to some extent. Arsphenamine given intravenously has been advocated when Vincent's organisms are present. Postural drainage has been recommended for many years. This resumé covers essentially the usual therapeutic measures employed in chronic bronchitis and bronchiectasis during the past century.

In more recent years a number of new methods of treatment have been developed. We desire to report upon our experience with one of the most generally used modern treatments, namely, the use of iodized oil, with as accurate an estimate as possible of its therapeutic value.

The French were pioneers in the use of iodized oil in the bronchial tract. Sicard and Forestier<sup>1</sup> in 1922 were the first to use this method. It was done for the sole purpose of diagnosing bronchiectasis. They found in a short time, however, that some patients injected with iodized oil showed improvement in their clinical symptoms. More recently, Cole and Nalls,<sup>2</sup> Blumberg,<sup>3</sup> Burge and Post,<sup>4</sup> Balyeat,<sup>5</sup> Weinberg,<sup>6</sup> Ochsner<sup>7</sup> and others in this country have advocated the use of iodized oil in the bronchi as a therapeutic measure for chronic bronchitis and bronchiectasis.

About eighteen months ago we decided to adopt this method of treatment. The preparation we have been using is lipiodol, a poppy seed oil containing 40 per cent iodine. The iodine

is chemically combined with the oil so that no free iodine is present but this iodine is liberated so slowly that it is nonirritating. So much weight is added to the oil by the iodine that gravity carries it to the bottom of the cavity of the bronchus, mechanically floating any pus or secretions to a higher level where it can be coughed up. We have noted by fluoroscope, especially in asthma cases, mucous plugs abruptly obstructing the flow of the oil and on later examination have found the oil in the lung, the plug apparently having been coughed up. We feel that the iodine has natural expectorant qualities in the bronchi. By absorption it gives a continuous mild tonic effect.

Complete chest, X-ray and sputum examinations are given each patient before oil is used. We also give them iodides internally for a short time to be sure they are not sensitive to iodine. Then, as an added precaution, we use an extremely small dose of oil for the first treatment, not over 1 c.c. in each side. We consider the chief indication for therapeutic use of iodized oil is cough and expectoration in nontuberculous patients who have not responded to the usual forms of treatment. After instillation of iodized oil, fluoroscopic examination and X-ray films will disclose what we are dealing with in the bronchial tract.

Contraindications are (1) active pulmonary tuberculosis, (2) acute infection, and (3) myocardial weakness, especially with pulmonary edema.

It is highly important to make a fluoroscopic examination before and after each injection of iodized oil in order, first, to determine the condition of the bronchial tract; second, to confirm the presence of the oil in the tubes; and, third, to determine the amount of retained oil from previous treatments. One often finds retained

oil from previous treatments on one side and almost complete absence of oil on the other side. Burge<sup>4</sup> has noted oil retention for from 24 hours to many months, and in 1 case, for 2 years. Moreover, in cases of bronchial asthma in which it is necessary to inject the upper lobes with oil, a fluoroscopic checkup is essential to assure accomplishment of this purpose.

We have used the following technic in the majority of cases. It is a modification of the method of Blumberg.<sup>3</sup> The patient is seated as for a nose and throat examination. Nares and mouth are washed with a warm normal salt solution. The patient is instructed to grasp his tongue, put his head back and breathe constantly while the local anesthetic is being administered. Our anesthetic solution is:

|                                         |             |
|-----------------------------------------|-------------|
| Cocaine hydrochloride.....              | 2.00 grams  |
| Potassium sulphate.....                 | .60 gram    |
| Phenol.....                             | .20 c.c.    |
| Adrenalin chloride solution (1:1000)... | 10.00 c.c.  |
| Peppermint water.....                   | 40.00 c.c.  |
| Distilled water q.s. ad.....            | 150.00 c.c. |

By means of a 5 c.c. Luer-type syringe, 4 c.c. of the anesthetic solution at a temperature of 110°F. is dropped into one nostril. This is repeated every 5 minutes in alternating nostrils until the cough reflex is abolished. Following the anesthesia, the patient is instructed to cough and expectorate all the anesthetic solution possible. This helps to prevent symptoms of cocaine intoxication. After a period of from 5 to 10 minutes iodized oil is then instilled through the nose in like manner with the patient shifting so that the oil will pass by gravity into the desired lobes. On the average, we use from 8 to 10 c.c. of the anesthetic solution and from 1 to 3 c.c. of 40 per cent iodized oil. Iodism may be expected occasionally and is due to faulty technic, the patient coughing up and swallowing the oil, or to sensitivity of the patient to iodine.

We do not use the intranasal method when it produces sneezing or when there are gross anatomic nasal defects that would interfere. In these cases the supraglottic method is used

with the same anesthetic solution. Pontocaine (1 to 2 per cent) solution is also a very satisfactory anesthetic for the supraglottic technic. Pontocaine has been so successful with our cocaine-sensitive patients that lately we have been using it in other cases with good results. Both the intranasal and supraglottic method with the cocaine compound require from 20 to 30 minutes. However, the satisfactory results obtained warrant this rather time-consuming procedure.

We have given iodized oil to patients who have chronic coughs of many months' or years' duration and who have not responded to any other form of treatment. This is the type of case that in the past has gone for months and years without obtaining any relief and that we considered hopelessly chronic. Many of these patients have obtained marked or complete relief of their symptoms. Success in relieving cases of chronic bronchitis, a number of which were complicated by bronchial asthma, has been obtained. Incidentally, the asthma has also been relieved. Alison,<sup>8</sup> Taylor,<sup>9</sup> Fink<sup>10</sup> and Balyeat<sup>11</sup> have reported good results in the treatment of bronchial asthma by the use of iodized oil. We have been much less successful in our cases of advanced purulent bronchiectasis, but have had some quite favorable results in the milder types of bronchiectasis. Following the repeated injections of iodized oil, we have noted the relief of cough and expectoration, an improvement in the general condition of the patient, and frequently a gain in weight. Over five hundred injections of oil to a total of 50 patients have been administered in our office.

Symptoms of iodism followed only 1 injection. This patient received later treatments without iodism. Goldstein<sup>12</sup> reports a death of a 47-year-old man. Twenty c.c. of the iodized oil was used for diagnosis. Death was attributed to nephritis and overwhelming toxemia. We have obtained excellent results from small doses of the oil, and our freedom from complications may be due in part to the use of these small doses.

# ILLUSTRATIVE CASES

**Case 1.**—Mr. J. H. W., aged 74 years, was referred to us by Dr. Carden Warner on November 15, 1937. The patient gave a history of persistent and annoying cough with expectoration for the past year. He had received treatment from several physicians and had spent the previous winter in California, but had obtained no relief. Physical examination, X-ray film and intracutaneous tuberculin test showed no evidence of pulmonary tuberculosis or other disease of the lungs. Diagnosis was made of chronic bronchitis and on November 19, 1937 iodized oil treatment was started. He received weekly treatments of from 2 to 3 c.c. of oil for 3 weeks and then treatment was given at intervals of 2 weeks. Finally, treatment was given at monthly intervals. Eighteen treatments in all were given, but he was entirely free of symptoms in 3 months, after receiving only 10 treatments. He had had no recurrence of bronchitis 10 months after his last oil instillation. His X-ray examination after oil was injected showed no evidence of bronchiectasis.

**Case 2.**—Mr. J. W. A., 65 years of age, was referred to us by Dr. Sidney Cousins on March 14, 1937. He gave a history of chronic cough and expectoration for the past 3 years, with attacks of asthma which had been becoming more frequent and had interfered with his work for several months. We put him on vaccines, ultra-violet light, potassium iodide and ephedrine and amytal internally. This helped him some for a few months, but he then became progressively worse. Adrenalin gave temporary relief. On January 2, 1938 we started him on iodized oil instillations of 2 to 3 c.c. first at intervals of 5 days and later of 2 weeks and finally 4 weeks. His asthma cleared up in 2 months. His bronchitis gradually improved. He received his last treatment July 10, 1938 and states he has had no return of the bronchitis or asthma during the past 9 months. X-ray examination after using iodized oil showed no bronchiectasis.

**Case 3.**—Mr. E. O., aged 38 years, came to us October 7, 1938. He gave a history of severe paroxysmal cough with moderate expectoration for a period of 4 months. His cough was worse at night and he complained of wheezing and dyspnea. Physical examination, X-ray films and sputum examination were negative to tuberculosis. His symptoms were so severe that he was unable to work for several weeks. We started him on iodized oil treatments on October 16, 1938, giving him treatments of 2 to 3 c.c. at weekly intervals the first month, then at intervals of 2 weeks. His symptoms improved decidedly in 3 weeks and he

was able to return to work. He has continued to improve and now has only a slight cough and expectoration a few times a day. His wheezing and dyspnea, he states, have completely disappeared. His X-ray films after injection of iodized oil showed a mild bronchiectasis on the left side.

**Case 4.**—Miss M. M., aged 40 years, referred to us October 8, 1937 by Dr. E. W. Titus, gave a history of cough with rather profuse expectoration for the past 3 years. She had no history of bad taste or odor to the sputum. She had rather frequent mild asthmatic attacks at night. She continued to have these symptoms in spite of vaccine treatments, potassium iodide and later creosote and sedative cough remedies. On April 26, 1938, 18 months after we first saw her, we started iodized oil instillations. The usual methods outlined in the previous case reports were used, and she began to steadily improve. She now takes treatments once in 6 weeks and claims she has had no cough, expectoration or asthma for the past 4 months. Her X-ray films after the use of oil showed a mild bronchiectasis at the base of the left lung. In view of the fact a mild bronchiectasis was present, we feel this is a rather remarkable result in a case where symptoms had persisted for five years.

**Case 5.**—Mrs. H. LaF., aged 26 years, came to us for examination September 10, 1937. She gave a history of cough with profuse expectoration for the past 6 years. The sputum had a bad taste and fetid odor. She had coughed blood on two occasions. Physical examination and X-ray films showed no evidence of pulmonary tuberculosis, and the sputum was negative to tubercle bacilli. We started iodized oil treatments on November 7, 1937, giving them once a week. Following the method used in previous treatments we gradually increased the intervals to 6 weeks. X-ray films taken after oil injections showed an extensive bronchiectasis at the base of the left lung. We have had no improvement whatever except a diminished odor to her expectoration. We feel that a lobectomy is the only method by which this patient may obtain relief.

On analyzing the 50 cases treated with iodized oil, we classified 27 as having no anatomic defects as determined by bronchograms, although they had cough and expectoration not relieved by the usual means. We labeled these simple bronchitis. The results are 8 relieved, 8 much improved, 9 improved, and 2 unimproved.



There were 8 cases with typical bronchial asthma which after bronchograms were diagnosed as bronchitis. Of these, 2 were completely relieved of their bronchitis and asthma, 4 were much improved, and 2 were improved.

Four more cases with bronchial asthma showed in the bronchogram a mild bronchiectasis. Following treatment, 1 was relieved, 1 was much improved, and 1 was improved. One patient with marked bronchiectasis and asthma was much improved.

There were 6 cases that showed definite, though not marked, dilatation deformities of the bronchi following iodized oil. These we termed mild bronchiectasis. Of this number, 1 was relieved of all symptoms, 4 were much improved, and 1 was improved.

Five of our cases showed marked anatomic bronchial defects. We classified these as marked bronchiectasis. Of these the clinical improvement was very slight. The expectoration was made easier and at times would be reduced in amount. The end results were considered poor and we classified them all as unimproved.

## SUMMARY

We have treated a total of 50 cases with iodized oil. Of this number 43 patients, or 86 per cent, obtained either complete or partial relief of their symptoms. Seven patients, or 14 per cent, obtained no definite relief.

We feel after 18 months' experience that the therapeutic use of small doses of iodized oil in the bronchial tract is a safe procedure and a distinct advance in the treatment of chronic bronchial conditions. In our opinion this treatment should be used more generally in the future than it has been in the past.

## BIBLIOGRAPHY

1. SICARD, J. A., AND FORESTIER, J.: Bull. et mém. Soc. méd. d. hôp. de Paris, 1922, **46**, 463.
2. COLE, D. B., AND NALLS, W. L.: Virginia M. Monthly, 1938, **65**, 336.
3. BLUMBERG, N.: Dis. of Chest, 1937, **3**, 15.
4. BURGE, F. W., AND POST, J. W.: Ibid., 1938, **4**, 20.
5. BALYEAT, R. M.: Southwestern Med., 1937, **21**, 341.
6. WEINBERG, J. A.: Arch. Surg., 1933, **27**, 545.
7. OCHSNER, A.: S. Clin. North America, 1930, **10**, 843.
8. ALISON, J. F.: South. M. J., 1933, **26**, 696.
9. TAYLOR, J. H.: Minnesota Med., 1932, **15**, 408.
10. FINK, L. W.: Ibid., 1932, **15**, 522.
11. BALYEAT, R. M., SEYLER, L. E., AND SHOEMAKER, H. A.: Radiology, 1935, **24**, 303.
12. GOLDSTEIN, D. W.: J.A.M.A., 1936, **106**, 1659.

## ABSTRACT OF PAPER READ AT THE ANNUAL SCIENTIFIC ASSEMBLY OF THE SOCIETY, APRIL 25, 1939

"HELMINTH PARASITES OF IMPORTANCE IN THE UNITED STATES; LABORATORY METHODS FOR THEIR DETECTION," **Eloise B. Cram**, Division of Zoölogy, National Institute of Health, U. S. Public Health Service.

A simplified, practical method which has recently been developed for the laboratory diagnosis of certain protozoan and worm infections consists of fecal examination by centrifugal-flotation with a zinc sulphate solution of a specific gravity of 1.180. The resulting concentration of ova or cysts may be as high as 1000-fold. The ova of hookworms, ascarides and whipworms are readily detected by this method. Surveys conducted in recent years have contributed greatly to our knowledge of the prevalence and distribution of these intestinal parasites.

There are several other important worm parasites which necessitate more specialized methods of diagnosis. As regards tapeworms, whereas the eggs of species of *Diphyllobothrium* and of *Hymenolepis*, and the gravid segments of species of *Taenia*, may be found in the feces, *Echinococcus*, since it occurs outside the intestinal tract, is much more difficult to diagnose. It comes to light occasionally at operation, when the hydatid cyst may be diagnosed by the hooks of the

scolecex; intradermal and complement-fixation tests are of value in the diagnosis of hydatid disease.

As regards roundworms, trichinae and pinworms are two species which are much more common in the United States than generally believed. Examinations of 3731 diaphragms from unselected necropsies have shown a trichina incidence of 16.4 per cent. More reliable results are obtained by the use of a double method, consisting of the direct examination of press preparations and of examination by the digestion-Baermann method, than by any single method. The intradermal test and the precipitin test are of value in the diagnosis of suspected cases of trichinosis. A new and improved trichina antigen has recently been developed for use in these tests; this antigen is available for distribution to physicians.

Pinworm infections have been largely overlooked because of the infrequency of appearance of eggs of this parasite in the feces. The use of a new kind of anal swab with a removable cellophane tip, designated the NIH swab, has greatly facilitated diagnosis. These swabs are inexpensive, are conveniently transported, are very effective for the collection of pinworm eggs from the perianal region, and are easily prepared for microscopic examination. This swab has been used in the examination of approximately 4000 persons in this country, including 2300 persons in Washington, D. C., 39 per cent of whom were found infected with pinworms.

## AFRICAN SLEEPING SICKNESS

### A COMPARISON WITH DEMENTIA PARALYTICA AND WITH EPIDEMIC ENCEPHALITIS

EUGENE DE SAVITSCH, M.D., *Washington*, AND WALTER FREEMAN, M.D., F.A.C.P., *Professor of Neurology, George Washington University School of Medicine*

African sleeping sickness, more appropriately known as human trypanosomiasis, is the disease produced by a parasite belonging to genus *Trypanosoma*, and is characterized by irregular fever, skin eruptions, adenitis, puffiness under the eyes, and mental and physical lethargy. It is confined almost entirely to Equatorial Africa, and its distribution corresponds with that of tsetse fly which is the only known carrier of this trypanosome.

Trypanosomiasis is acquired through a bite of an infected tsetse fly, an insect about the size of a deer fly. Formerly man was considered the only host, but recently it has been proved that at least eleven kinds of antelope, particularly *Limnotragus Spekei*, may serve as reservoir. The disease has been recognized for a very long time; in fact, the early slave traders recognized cervical lymphadenopathy as an important diagnostic sign, and on this basis they would decline to purchase a slave.

The etiologic agent of African sleeping sickness was identified by Forde<sup>1</sup> in 1901, who encountered a trypanosome in the blood of a European suffering from fever in Gambia. In 1902 Dutton<sup>2</sup> made similar observations in the blood of a native. Castellani<sup>3</sup> in the same year found *Trypanosoma* in the cerebrospinal fluid as well as in the blood of sleeping sickness victims in Uganda.

The disease at present is limited almost entirely to the native population, in fact, one of us (E. de S.) during an extensive tour of the Belgian Congo was unable to find a single European victim. Though it is conceivable that this is due in a large measure to hygienic precautions rigidly enforced by the Belgian Colonial Administration, it is also likely that the dietetic factor may play a much more important role than we are inclined to believe.

#### CLINICAL COURSE

Roughly speaking the disease may be considered as representing two distinct stages: the so-called "incubation period," which may last as long as 7 years, and the "sleeping sickness" stage.

It takes 8 to 10 days before the bite of an infected fly produces any systemic symptoms. The first signs of the disease are usually chills and fever of intermittent type. These are followed in a relatively short period by the classical symptoms of the disease: headache, asthenia, edema of the eyelids and extremities, and generalized lymphadenopathy. A form of hyperesthesia known as Kerandel's sign is frequently observed; it is characterized by an unusual degree of discomfort when the patient strikes the limbs lightly against any hard object. Erythema is frequent among European victims. The gastrointestinal symptoms of nausea, vomiting and diarrhea are not sufficiently specific to be of diagnostic import, where practically every native is a victim of some sort of intestinal parasite. Enlargement of the liver and the spleen, which are believed by many to be pathognomonic of the disease, are probably also misleading since the victims of trypanosomiasis are also usually the subjects of malaria, leishmaniasis, or other disease.

The neurologic aspects of sleeping sickness are numerous. This is readily understood when it is taken into consideration that the destructive activity of the trypanosome is widespread. Any part of the brain and spinal cord may be involved. Objectively in the beginning there may be no changes in the deep reflexes; later they tend to be diminished or abolished altogether. On the other hand, spastic phenomena, with positive Babinski sign and ankle clonus are not unusual. In the very late stages of



the disease one of us has observed the grasp reflex.

The motor disorders involving groups of muscles terminate in their atony and atrophy. On the sensory side, areas of hyperesthesia and hypesthesia are easy to outline. Vasomotor disturbances are observed in the extremities; subjectively, the patients complain of cold, and

pecially those of the tongue and hands, as well as epileptiform seizures of Jacksonian type, are not infrequent. The seizures may or may not be preceded by an aura.

Toxic iridocyclitis and choroiditis are frequently met with, and there may be marked diminution in the visual acuity but without papilledema. The auditory nerve may be affected but other cranial nerves usually escape. The masked expression so often present appears to be of central origin.

Mentally the patient shows deterioration beginning at a very early stage. Delusions or psychic symptoms resembling those of general paralysis of the insane may be present. There is marked deterioration in personal habits. The mental confusion may be associated with apathy or excitement and the patient may suffer from visual or auditory hallucinations.

The sleeping stage of trypanosomiasis is nothing but the accentuation of languor and debility (fig. 1). The patient becomes indifferent to everything around him, but is still able to speak and recognize his surroundings. He is able to swallow his food, but he sometimes forgets to chew it. The control of the sphincters is preserved until very late in the disease. The torpor increases progressively, the victim lapsing into sleep whenever he is left undisturbed for a short period. This gradually deepens, the body emaciates progressively and the patient finally passes from a comatose stage to his death, looking like a living skeleton.

The diagnosis of the disease is easily confirmed by laboratory procedures. The trypanosomes may be demonstrated in lymph, cerebrospinal fluid or blood. The spinal fluid shows pleocytosis of a few hundred to 2,000 lymphocytes per cubic mm. with increase in globulin and sometimes a paretic colloidal gold curve. The blood shows a picture of secondary anemia with mononucleosis.

#### TREATMENT

The treatment of trypanosomiasis is carried out very effectively by different arsenical prepa-



FIG. 1. Trypanosomiasis. Victim in late stages, forsaken by others and unable to obtain shelter. Note hypotonia.

the nails may appear cyanotic. A parkinsonian syndrome has been described but is neither typical nor specific. Cerebellar disturbances, which are quite common, are evidenced by adiadochokinesis, past pointing and asynergia. The Argyll-Robertson pupil has never been observed in trypanosomiasis, but on the other hand fibrillary twitchings of the muscles, es-



rations. In the Belgian Congo where the treatment is carried out on a larger scale than anywhere else trypanosamide has gained great favor. The dosage varies with the individual physicians; it is agreed, however, that 2 grams a week is probably safe. The patients must be watched for optic atrophy. In the early stages of trypanosomiasis, before well-marked dementia has developed, a complete cure may be hoped for. If the disease has progressed to the stage of somnolence, even the intrathecal administration of arsenicals may fail to prevent the progress of the disease.

#### MORBID ANATOMY

Examination of sections from three cases of human trypanosomiasis reveals no alteration that has not been described before<sup>4</sup>; but recent advances in our knowledge of the encephalitides, especially as regards the understanding of the relationship between pathogenesis and symptomatology, allow some interesting comparisons. In the first place, the meningeal infiltrations observed in human trypanosomiasis seem to result from the extrusion, along the perivascular sheaths, of cells that are found in the interior. In other words, there is no primary meningitis, but as in the case of paresis and encephalitis, whatever adventitious elements are found in the meninges are derived from the neural parenchyma. The second feature worthy of note is that the cerebral cortex in trypanosomiasis is almost perfectly preserved in contrast to the very marked alterations that are usually encountered in dementia paralytica. Not only do we see very little perivascular infiltration, but practically no disorganization of the cerebral cortex with accompanying gliosis, rod cells, vascular proliferation and the like. The same is true, of course, in epidemic encephalitis, in which the cortical lesions are very few and of minor degree. On the other hand, trypanosomiasis differs from both syphilis and encephalitis in showing the inflammatory reaction preponderantly in the subcortical white matter. The inflammation is diffuse, and ap-

pears not only in the subcortical white matter but also in the basal ganglia, cerebellum and brain stem (fig. 2). Wherever myelin sheaths are present in large numbers there the infiltration will be found surrounding the vessels. Moreover, the infiltrations are somewhat different from those to be found in dementia paralytica and encephalitis. They do not present the rather sharply outlined cuff-like formations that are observed in syphilis and encephalitis, but the cells spread beyond the confines of the

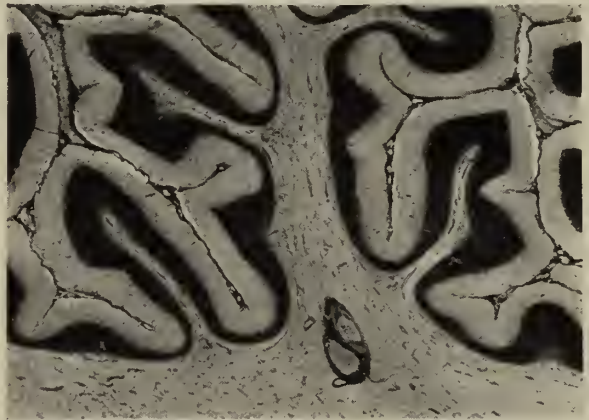


FIG. 2. Trypanosomiasis. Cerebellum showing marked perivascular infiltration with extrusion into meningeal spaces. Some cortical infiltration and gliosis with marked proliferation of the Bergmann cells.

perivascular sheaths. Moreover, the cells are by no means limited to the neighborhood of the vascular sheaths but they tend to wander out into the surrounding tissues. This is characteristic chiefly of the plasma cells which are disseminated throughout the white matter and also in such grey nuclei with many myelin sheaths as the globus pallidus. Nevertheless, the signs of degeneration as indicated by the breaking down of axis cylinders, the accumulation of fat and the replacement and proliferation of neuroglia are practically absent. The only place where parenchymatous changes are noteworthy, that is, where there is any actual tissue disorganization, is in the walls and floor of the third ventricle (fig. 3) where the infiltrations are so extreme as to conceal many of the nobler

elements of the parenchyma. In this respect the resemblance to epidemic encephalitis is quite marked.

Other nuclei, such as the lateral geniculate body, red nucleus, substantia nigra, pontile nuclei and cerebellar nuclei, while not infrequently standing out less clearly on account of the presence of neighboring perivascular exudates, nevertheless seem to be adequately rich



FIG. 3. Trypanosomiasis. Hypothalamus showing perivascular and diffuse infiltration in whole region especially in vegetative nuclei.

in cells of a fairly normal appearance so as to render it unlikely that the function of these bodies is seriously disturbed. In the cortex of the cerebellum, however, the very large number of cells in the Bergmann layer, in spite of the integrity of the Purkinje cells, renders it likely that the function of the Purkinje cells may be impaired even though their number appears relatively normal. The ependyma and choroid

plexus are only slightly involved, and no parasites are found in the cerebral tissue.

It would thus seem that trypanosomiasis differs fundamentally in its pathology from the diseases caused by the *Treponema* and by the unknown virus of encephalitis. We believe that the brunt of the attack by the trypanosome is upon the myelinated fibers, but diffusely, so that with the infiltration and isomorphous gliosis there is built up a tissue replacement, concealing atrophy and reduction in the number of axis cylinders and myelin sheaths. One may think of the hebetude and other phenomena of the organic mental deterioration present in this disease as resulting from interruption of the association fibers in all parts of the cortex just as deterioration occurs in syphilis from degeneration, dislocation and disappearance of cortical nerve cells. Furthermore, whereas syphilis apparently seldom attacks the vegetative centers of the interbrain and hindbrain, the localization in trypanosomiasis is particularly intense in these regions, involving the grey matter just as much as the white matter. These areas, of course, are also involved in epidemic encephalitis, but a decided distinguishing feature in these cases is the fact that even though infiltration in trypanosomiasis may be quite marked in the substantia nigra, there is no actual degeneration of the ganglion cells which is so characteristic in epidemic encephalitis.

#### SUMMARY

Human trypanosomiasis shares certain clinical features of both dementia paralytica and epidemic encephalitis. There is hardly a symptom of dementia paralytica that cannot be reproduced in trypanosomiasis, whereas the striking somnolence with fever is one of the outstanding features of epidemic encephalitis. Pathologically, the differences between the three diseases are so marked that each one deserves a category by itself. Trypanosomiasis might be described as a diffuse nonsuppurative inflammation of



the white matter of the brain with particular localization in the diencephalic region, associated with few obvious destructive parenchymatous lesions.

N. B. The authors wish to express their appreciation to the Belgian-American Educational Foundation and to the Belgian Colonial Ministry for the coöperation and support that made this study possible. To the Institute Bunge of Antwerp the authors are grateful for technical assistance.

# BIBLIOGRAPHY

1. FORDE: Trypanosomiasis. See Joyeux, C., and Sicé, A. *Précis de médecine coloniale*, 2nd ed. Paris, Masson, 1937.
2. DUTTON AND TODD: Trypanosomiasis. Liverpool, Memoir II, Liverpool School of Tropical Medicine, 1903.
3. CASTELLANI, A.: *Manson's Tropical Diseases*. London, Cassell, 1929.
4. SPIELMEYER, W.: *Die Trypanosomenkrankheiten und ihre Beziehungen zu den syphiligen Nervenkrankheiten untersuchungen aus dem Institut für Schiffsund Tropenkrankheiten in Hamburg und aus der psychiatrischen Klinik in Freiburg i. Br.* Jena, G. Fischer, 1908, 8°.

## BENIGN PARANOID REACTIONS\*

ELMER KLEIN, M.D., *Washington*

I have chosen this designation for a group of cases, which I feel deserve to be considered apart from the usual paranoid psychoses. While there are differences in the clinical picture which these cases present in contrast with the rank and file of the paranoid conditions, it is on grounds of personality reaction type, course and outcome that I feel the differentiation should be established.

Much of our current psychiatric concepts and practices are derived from the mental hospital with its necessary tendency toward routine and need for statistical narrowness. The diversity of reaction types is apt to be overlooked, individual clinical differences likely to be erased for the sake of a pat diagnosis which will fit into required categories. Individualization of cases in this way is likely to suffer in terms of their diagnostic, treatment and prognostic needs. The psychiatrist practicing in the community is not constrained by these institutional and statistical needs. His problem is not so much that of establishing a diagnosis acceptable to a statistical manual. In his search and evaluations he has to address himself much more to possible deviations from standard types. Indeed, he goes for these very differences because they may provide the modifiable issues on which therapy or management and favorable outcome

can be effected. If these remarks seem to introduce unnecessary polemics between institutional and community psychiatrist, it is unintended. My only intention is to point to one of the reasons which in my opinion has made for some oversights.

Another reason for the inadequate consideration which the benign paranoid reactions have received is probably due to the fact that many of these patients never get to the mental hospital at all. Their sickness is of relatively short duration, and sometimes does not interfere with the personality functioning seriously enough to prevent continuation of work or job. Of our 6 cases, shortly to be cited, only 1 had to go to a sanitarium and 1 to the psychopathic ward of a general hospital, both to be discharged within two months. The others remained in the community at their accustomed tasks and customary environment. One was seen in private practice, the others in a clinic, the Washington Institute of Mental Hygiene.

Probably through a too wholehearted embracing of Kraepelin's fatalistic nosology in this country, we find little attempt in American literature to make finer differentiations in paranoid conditions. Psychoanalytic practice, on the other hand, has concerned itself less with defining clinical conditions than with their so-called mechanisms and psychogenesis. On the continent as early as 1908 an attempt was made

\* Chairman's Address, read before the Section on Neurology and Psychiatry of the Society, May 4, 1939.



by Gierlich and Friedmann<sup>1</sup> to single out and describe mild paranoid cases. Friedmann divided them into endogenous and exogenous groups. In the first group are cases where the delusional ideas develop slowly over a period of months while in the exogenous group the onset is rather abrupt and the emotional dominance (either of depression or elation) is more evident. Most of the cases he reports recovered.

Gierlich also cites a number of cases which are rather poorly worked up and one feels lacking in clinical similarity except that they are mostly benign. His formulation of these paranoid episodes, however, is quite interesting and has some validity. He says, "The foundation of delusional formation in my opinion consists in the disturbances of the mental condition by violent protracted emotions of expectancy, suspense, anxiety, anger, envy, etc., in combination with an existing weakness of judgment toward these highly accentuated ideas."

It is interesting to find that Friedlander<sup>2</sup> in a brief communication in 1906 found profound affective disturbances related to sex life in cases with slow or rapidly developing paranoid symptoms. He thought his most important observation in his paranoid symptom complexes was that all these patients showed circulatory disturbances of the type one finds in anxiety states. Because of the labile pulse and pronounced heart disturbance the author wonders whether we are not dealing with a neuropsychosis on vasomotor grounds.

Bleuler<sup>3</sup> in 1902 placed within Kraepelin's manic-depressive group a sub-group of cases characterized by recurrent hallucinatory or paranoid formations within the emotional attacks. Bleuler bases the grouping on the nosologic principle of similar cause, similar heredity, the changeability of the single symptoms from case to case as well as in the individual, the minimal intelligence defect in the remissions and the mixture of manic-depressive symptoms.

In the French literature we find Nathan and

Gallot<sup>4</sup> describe 2 cases rather similar with circumscribed attacks of paranoid delusions and hallucinations in a depressive development. The authors interpret the development as the precipitation of delusional attacks through the progressive sensitization of the affective life. Recovery after the attacks was complete and they placed these cases among the affective rather than among the paranoid psychoses.

Schilder<sup>5</sup> in his "Introduction to Psychoanalytic Psychiatry" regards both transitory and lasting paranoid reactions as being rooted in a certain glandular constitution or perhaps brain constitution. The transitory paranoid reaction to him represents a definite attitude of the individual in part determined by his endocrine habitus. Schilder accepts Freud's interpretation of a paranoid reaction as a fixation on a homosexual level. But he adds that we find also a "narcissistic disorder in paranoia from the blurring of the dividing line between the self and the environment."

Claude and Schiff<sup>6</sup> in a paper in *L'encéphale* which they significantly termed *Le délire d'interprétation à base affective* discuss the book of Kretschmer<sup>7</sup> which first appeared in 1918 and later in 1927 in a second enlarged edition.

Kretschmer sums up the clinical condition he describes in his book on "Der Sensitive Beziehungswahn" as an independent disease group with definite etiology symptoms and course as follows: Etiology: serious heredity taint, easy fatigability through work and affect. The condition arises through a combination of character, experience and milieu. The character is sensitive, "asthenic," unable to unload psychically, extraordinary emotional softness, easily wounded with much conscious pride and stubbornness, sustained intense affective reactions sometimes however labile, self-observant and self-critical, modest, rather introverted and indecisive. The experience which precipitates the condition he regards as one of humiliating insufficiency. The milieu he describes as tension of feeling of self in a humiliating situation.

He says the ideas and the affect during the height of the psychosis center around the pathogenic experience. The symptoms are heightened expression of characteristic personality features, with neurasthenic symptoms of fatigability frequently present. As to the course of the illness, he states: "It is characterized by complete personality preservation through all stages, by lively psychological reactivity and in 'pure' and lighter cases through its tendency to healing." His cases lasted from a few months to years.

In his theoretical approach toward the problem of benign paranoid conditions he makes use of the contrast drawn (by Wernicke) between "overvalued ideas" and "complexes." The latter, according to Wernicke, are unmanageable, affectively accentuated experiences. Overvalued ideas are the result of hurting experiences becoming operative in the patient's life. Kretschmer claims suppression (*Verhaltung*) as opposed to repression the basis for psychasthenic and sensitive paranoiac reaction types, while repression in hysterical reactions and overvalued ideas in expansive developments. Kretschmer further feels that asthenic character traits favor development of sensitive delusions while "primitive" traits increase their benignity and expansive traits lead to fixation and chronicity.

Kretschmer's book is a clinically well documented attempt to trace certain types of paranoid developments to their characterogenic components. It is really a consideration of pathogenesis in a wider sense and not merely of this special group. From our small number of cases it would be difficult to say how valid his personality types are. Given a sufficiently large number of personality traits describing any given type, one can easily select those that happen to fit the individual under consideration and omit the others. The characterizations of the personality are, after all, generalizations of personality equipment and operation varying in content and specificity from individual to individual. It would seem to me that we would remain on safer ground were we to adhere to

the concept of equilibrium or balance of which endocrinology has made such a consistent use. For what, after all, is important in the efficient functioning of the personality is the balanced operation of the various factors that constitute it, rather than the presence or absence of component factors. At this point I would like to introduce some illustrative personality types in which the maladaptation culminated in the development of benign paranoid reactions:

Miss M. H. was an intelligent but very strait-laced 63-year-old spinster who had held executive positions in Eastern social agencies before her advancing age, poor health and the depression conspired to reduce her to very modest circumstances and finally to a W.P.A. job in Washington. Three years before coming here she said she developed a lot of unfounded suspicions toward her secretary. She explained she was not herself at the time, having lost her life savings of \$10,000 in a bank crash and on top of that fractured her ankle in an accident. She had to give up a good position, later having difficulty in getting any kind of job. While waiting for one she took a mental hygiene course, during which she found herself having a vision of the lecturer in the nude. She said she could not rid her mind of the filth and had the same experience with the minister at Communion. The vision and the thought of it had literally been hounding her, interfering with her sleep, work and thinking. Prayer and church were the only anodyne until the ministers in church sensed her thoughts because one of them said, "Try me again." On another occasion, "If you can't get this filth out of your mind you had better leave the church." Others made subtle allusions to her and her guilty thoughts in their sermons. Some friends made pointed remarks and men fellow workers allowed themselves to use crude language in her presence. In her attitude, though feeling persecuted, there was no hate or desire for vengeance.

During this same time she was experiencing some kind of pelvic agitation, described as a tremulousness and erotic sensation giving rise to her troubling train of thought. Worse, by sort of emanations, she began arousing and upsetting others at her work, who would make sarcastic remarks and would have nothing to do with her.

The woman had a great many somatic preoccupations over a period of years with numerous physical examinations, laboratory and X-ray check-ups. At the time we are describing, though she complained of various somatic discomforts, nothing of importance



physically was found. Interestingly enough, we noted, what is a common place observation in paranoid conditions, that the more the somatic preoccupations would be in the foreground the more the paranoid ideas would recede and vice versa.

In her personality make-up she was quite rigid, very conventional, smugly self-righteous and proud, who had considerable difficulty in her previous social adaptations. She prided herself on her past "purity" and her excessive social and moral fastidiousness which was responsible for her having remained single.

During our interviews she was emotionally tense and occasionally tearful but showed no depression. Her sensorium was well preserved. Insight, though fleeting at first, took on increasingly salutary stability. Physically she had a girlish figure and kept herself youthful looking. It was evident she hated to drift into old age. When the ophthalmologist, who found besides an old chorioretinitis some sclerosis of the fundi vessels, told her of this, she gave him a long dissertation on the restoration of blood vessels to a youthful condition by means of electrotherapy.

In sizing her up I felt that we were dealing here with a paranoid development in a 63-year-old, rapidly fading spinster with a long-standing sexual repression, fighting against her biologic decline in the setting of a resurgence of guilty sexual feelings, giving rise to fantasies of nude males, self-blame and increased sensitization to what others thought and felt about her, resulting in ideas of reference and misinterpretations. Fleeting insight through psychotherapy became better crystallized, and complete remission occurred following a hip fracture.

Mrs. I. R. was a 40-year-old, simple colored woman who about two months before coming to the clinic became very much concerned over a fortuneteller predicting to a neighbor the patient's death within three months. The other malevolent neighbors hearing of this then set to work quite systematically to effectuate the prediction. They put the "spyglass" on her, causing burning and acute pains all over the body; they would watch her every movement, read her lips and repeat things she said, etc. The burning and constant watching put her into such a state of torment that she was unable to sleep and her appetite and weight had fallen off. She had thought of suicide and even of homicide to put an end to them.

Her health background showed her to be oversensitive to health problems and there had been much doctoring and hypochondriasis. Her mother began acting queerly a couple of years before the patient's illness and accused her and her husband of trying to

get her insurance. Two paternal cousins were psychotic in a hospital.

In her mental status we found her naïve, of limited intelligence, emotionally immature. Her mood was described as a feeling of desperation. The sensorium and formal behavior were well preserved. Because of her suicidal and homicidal expressions she was hospitalized and recovered with good insight within two months.

Mrs. P. W. was referred to me by two social agencies where she had gone for help on account of her suspicions that her husband was taking narcotics, was having something to do with a dope ring, and that on account of him both of them were being investigated. My impression in this interview with her was that we were dealing here with an intelligent, cultivated, young married woman who had probably been entertaining some paranoid ideas about her husband taking dope—ideas which marital friction had exaggerated to a point of a paranoid panic.

On subsequent examination we found that the patient's father, who was a former urologist, was addicted to morphine and had two periods of hospitalization for it from the time that the patient was 10 to 17 years of age. When she was about 18 she had some transitory suspicions about one of her male friends taking "dope." While she was doing strenuous nursing duty in 1932 and while under deep emotional stress, she suffered from hysterical paralysis and paresthesias and for several weeks about a year later, under the same environmental circumstances, with a ptosis of the left eyelid and diplopia. At these times she had to give up her job and there were a great many hypochondriacal concerns.

Between three and four years ago the patient married a man about whom she knew very little at the time and who was about nine or ten years her senior. Later she found that he had had a very checkered career and had been married several times before; she has since questioned whether he was legally divorced. Their marriage was unhappy almost from the start because of his alcoholism, social and economic irresponsibility. He was much below her own level intellectually and socially. There have been several periods of separation and it was only due to the fact of their having an 18-month-old child that she had returned to him. She felt that the man had been indulging in various perverse sex practices and was greatly concerned about the possibility of his exposing the child to some sexual trauma. She has always suspected that in addition to his drinking he might also be indulging in drugs and because of his lack of



frankness, confidence or loyalty toward her, these suspicions had become exaggerated in the setting of her unhappiness into fullblown paranoid ideas. After several weeks of psychotherapy she recovered a good deal of her poise, balance and common sense perspective about her husband. There were a few brief paranoid flurries following the episode just described but since she secured her separation from her husband she has been working successfully as a nurse.

A. B. H., a 23-year-old medical student, over a period of several months developed an autistic love affair toward a nurse, leading to peculiar behavior. He made himself obnoxious to the nurse, who the patient thought cared for him but made herself inaccessible because of the interference of others. He thought he had been given the wrong cue as to approaching her by a designing fellow student. He was at a loss to understand her motives and attitudes in shying away from him and became quite puzzled and emotionally disturbed. In attempting to formulate some satisfying explanation he developed various ideas of reference about his fellow students and misinterpretation of their statements and behavior. He thought suggestive phonograph records were played and radio songs broadcast for his benefit or discomfiture. Insomnia, erratic appetite, inability to focus his attention on his work with vegetative symptoms of an anxiety state were complained of for a week or two before he came to my attention. Worry over the development and significance of aphthous stomatitis complicated the picture.

There was a short and much more innocuous paranoid colored flurry three to four years ago when he joined a fraternity in which he was made the butt of some practical jokes.

The outstanding feature in the mental status was his being subdued, tense and generally anxious with perspiring of the palms. There was partial insight which with psychotherapy became crystallized into a wholesome understanding. In his personality make-up he held rigid standards for himself and others. He was independent and self-reliant, stubborn, proud and uncompromising. His unevenly balanced personality crashed in the toils of a situation which compelling sex urge did not allow him to walk away from as he usually would, but he rose again with help of better perspective to keep on with his work.

Miss E. H., a 25-year-old government stenographer with an I.Q. of 136, was brought to the Clinic because she did not adjust satisfactorily to her work and created some disturbance in her office through unjustified fear of fellow workers and unfounded suspi-

cions and accusations against them. She herself said she felt so miserable, tense and distressed that her mind got mixed up at times. Two men made fun of her, talked behind her back and made "dirty cracks" at her. She saw special significance in happenings around her, special sex meaning in things said and her promotion or transfer being interfered with.

In a short episode the previous summer when she took a new job, she suffered from a feeling of tension, drawing sensation over her eyes, a feeling of choking and difficulty in swallowing with excessive perspiration of the extremities.

As during the psychiatric interview at her work too she was shy, self-conscious and overly sensitive to criticism. The affect was worry and tension. The main facts of her background are that she was raised in rural Montana before she was suddenly faced with the necessity of adjusting her life to an urban community thousands of miles from her home. As a child she suffered from chorea and nephritis for two years and was never physically very strong. Her sensitiveness and feeling of inadequacy was fed by a speech defect, which made her shy away from social contacts.

We had here then a constitutionally poorly balanced 25-year-old girl, socially uprooted, who in the face of work and social pressures in an alien environment was bowled over. To unaccustomed work she reacted with an anxiety state, and to the overwhelming mechanized office environment, with paranoid projections in an affective setting of worry and tension. During three weeks of psychotherapy there was rapid improvement with good insight.

Mrs. M. N. was a 27-year-old government stenographer, who the third day after her first baby's birth became upset, persistently feeling that people were talking about her and criticizing her because the baby had been born earlier than 9 months after marriage. She was sent to a private hospital because of suicidal preoccupations. Two years previously there was a similar paranoid flurry when she thought fellow workers were jealous of her because of her higher salary and greater efficiency and accused her of circulating false rumors, and her employers criticized her for allegedly bragging about her ability. Shortly after, she came to Washington and adjusted well to her new job and environment until the baby's birth. She worked up until two weeks before her delivery and quite capably managed to carry her housework as well. Previously too she had an excellent work record.

In her personality make-up she was quick-tempered, easily discouraged, wanted to go her own way. She was regarded as sensitive and inclined to fancy criticism. She could not stand her father's strict morals and left home at the age of 19. She had had 6 lovers before marriage with the philosophy that "I wanted to escape the conventionalities of life and yet keep up a front of respectability." She thought she was oversexed, yet did not feel much love toward her partners. She said she married her husband because all the other girls got married.

In her mental status she was tense and worried. She said, "I don't feel sad, rather a deep insecurity." There was a great deal of apprehension of social disapproval on account of her sex life and premature baby. She thought her colleagues laughed at her about it and people in the hospital—doctors, nurses, visitors—were talking about her. "That will make a fine story," "She'll never live that down," were some of the remarks, and there were misinterpretations of things she heard over the radio and read in papers. A significant remark made by her, however, was that she did not know but what she heard was an exaggeration of her imagination. The mood, it must be emphasized, was not dominated by a depressive feeling, and there were none of the complaints associated with a depressive state. Recovery with good insight took place within three months.

I am of course properly aware of the fact that 6 cases are too few from which to draw broad generalizations. Nor would they allow taking issue with Kretschmer's generalizations regarding etiology and symptoms with much of which our cases and deductions correspond only in a broad sense. It would be a vain nosologic ambition also to present these cases merely for the sake of an additional psychiatric label. What is more in mind is to point to certain worthwhile clinical differentiations in the paranoid group, where therapy and course give a reasonable assurance of favorable outcome.

In what phases of the problem are the differentiations most recognizable? Where are we apt to find ourselves on safe grounds in singling out these cases diagnostically from the broad paranoid group? The vulnerable sensitivity of the personality as shown by its instability is probably one of the most important factors diagnostically as well as pathogenetically. The tendency to see biased meanings in things, ac-

tions and sayings of others is less in the foreground than in the more malignant paranoid personalities. There is in general a low threshold of emotional load.

That the balancing assets in the patients of our small group were poor will probably be readily admitted. Emotional immaturity with a previous anxiety attack in one, poor social adaptability in another, a Spartan moral rigidity and callowness in a third, hysterical reactivity and suspicious episodes in the fourth and fifth, and a tendency toward hypochondriasis and invalidism in 4 of them can certainly be so regarded. If we allow ourselves a broad formulation we can say that excessive sensitivity to the failures and frustrations of life without an adequate compensatory resiliency proved to be their temporary undoing, an undoing which landed them at first in the mires of invalidism—a kind of surrender reaction—and later a comeback with projective blaming. Kretschmer's emphasis on easy fatigability received confirmation in only 2 of our cases.

Clinically, what is important in the benign paranoid states is that we look for episodic reactions before the onset of the present paranoid attack in contrast to the malignant type with its insidious but unrelenting development in personalities with clear-cut suspicious, chip-on-the-shoulder make-up. They must be differentiated too from the transitory paranoid elaborations with self-accusatory content so frequently encountered in depressions or on an infective-exhaustive basis (after operations or childbirth) with their ideas of reference and fleeting persecutory delusions or hallucinations. The clinical picture in these cases is not under the domination of a consistently depressive mood, nor do we find the usual vegetative features of a depression. It is dominated much more by what Adolf Meyer calls an impure affect. This places the group sort of half-way between Meyer's thymergastic and parergastic and paranoid reaction types. A state of tension with generalized anxiety and apprehension centering about the false interpretations and suspicions



are the characteristic features. The megalomaniac developments with their superiority feelings and flattering rationalizations so commonplace in the chronic paranoiac are here lacking. The fleeting insight with occasional doubt about the paranoid ideas and willingness to consider alternatives for his own interpretations are of extreme importance from the diagnostic and therapeutic point of view.

With the exception of one of our cases which would need special consideration because of the delusional development on a mentally defective and racial-cultural basis, the situational settings were productive of shame and humiliation.

Sex played an important role in 3 of the 6 cases—in 1 its prudish repression, in another its frustration, and in the third feeling of guilt in connection with its uncontrolled expression—as the setting for compensatory paranoid elaborations. In the fourth case the setting was a state of marital bankruptcy, in which sexual accusations became an incidental feature. What one sees here therefore is not so much the “mechanism of repression” as the poor digestion by the personality of what is forbidden. Homosexuality would naturally fall within the category of unacceptable, but did not happen to play a role in our small series of cases, which is surprising in the light of the psychoanalytic claims of its inevitable presence in paranoid states. Causation therefore in the benign paranoid reactions can hardly be said to be uniform. As to heredity, there were psychotic collaterals in only 1 of the cases and drug addiction in another. One can hardly draw any valid deductions on this score.

To conclude, my purpose in this communica-

tion is to call attention to a neglected benign paranoid syndrome, which Kretschmer has previously described as *der sensitive Beziehungswahn* (sensitive reference psychosis). We encounter these benign paranoid reactions as episodic attacks in poorly organized personalities. In their previous history are to be found a variety of psychotic and psychoneurotic reactions. They are generally extramural problems requiring supportive psychiatric treatment in the community. The setting in which these paranoid states occur is a humiliatingly frustraneous experience, and the characteristic symptoms are an impure affect with tension, guilt feelings and ideas of reference and misinterpretations. The pragmatic value of singling out these cases from the rank and file of paranoid conditions lies in their therapeutic availability and favorable outcome.

#### BIBLIOGRAPHY

1. GIERLICH, N., AND FRIEDMANN, M.: Studies in Paranoia. Nerv. and Ment. Dis. Monog., Ser. No. 2, New York, 1908.
2. FRIEDLANDER, E.: Ueber paranoide Symptomen Komplexe bei nicht Paranoischen, ihre Klinische Bewertung und psychische Behandlung. Centralbl. f. Nervenhk. u. Psychiat., 1906, p. 599.
3. BLEULER, E.: Ueber Periodischen Wahnsinn. Psychiat.-neurol. Wchnschr., 1902, No. 11, 121.
4. NATHAN, M., AND GALLOT: Les bouffées délirantes motivées. L'Encéphale, 1928, 23, 283.
5. SCHILDER, P.: Introduction to a Psychoanalytic Psychiatry. Nerv. and Ment. Dis. Monog., Ser. No. 50, New York and Washington, 1928.
6. CLAUDE, H., AND SCHIFF, P.: Le délire d'interprétation à base affective de Kretschmer et ses rapports avec le syndrome d'action extérieure. L'Encéphale, 1928, 23, 411.
7. KRETSCHMER, E.: Der Sensitive Beziehungswahn, 2nd ed. Berlin, J. Springer, 1927.

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**Unsuspected Coronary Thrombosis in Patients with Hemiplegia—A Clinical Study.** Sixty-six patients with hemiplegia were studied for the incidence of coronary thrombosis. It was found that 8 or 12.1 per cent of these patients with hemiplegia also had coronary thrombosis and that the latter lesion would not have been diagnosed were it not for the routine inclusion of detailed heart studies in the examination of all patients with hemiplegia, irrespective of history or clinical findings. While these figures compare favorably with the previously reported incidence of 11.2 per cent based on autopsy material, these results vary considerably from those of other workers.

Although there is nothing characteristic about the history or clinical findings of the hemiplegic who is prone to have an unindicated or latent

coronary thrombosis, the incidence is definitely greater in the white male beyond 40 years of age. The majority are between 50 and 60 years. It was pointed out that the cerebral lesion may be induced by the drop in blood pressure secondary to the coronary thrombosis, or that both lesions may be due to the same pathological process in the respective arteries. Mention was also made of the atypical forms of coronary thrombosis. There may be practical value in recognizing the association between coronary thrombosis and cerebral embolism from a therapeutic and prognostic point of view.

Extract from article by DANIEL L. DOZZI, M.D. *Annals of Internal Medicine*, June 1939, p. 1995.



# ARGENTAFFINOMA OF THE ILEUM\*

## REPORT OF A CASE

J. OGLE WARFIELD, JR., M.D., F.A.C.S., *Associate Professor of Clinical Surgery, Georgetown University School of Medicine*

The subject of these tumors continues to produce pathologic controversy. Because of the resemblance of their cells to cancer cells and because of their local infiltrative appearances these tumors were formerly thought to be carcinomata.

The term carcinoid was first used by Obendorfer (1907) who recognized the different clinical behavior and microscopic appearance and demonstrated that the carcinoid cells contained chromaffin granules and lipoids. Masson (1924) renamed these tumors argentaffinomas after showing that the cytoplasmic granules of the cells reduced an ammoniacal silver solution and stained dark.

Opinions as to the origin of these tumors are divided. Some believe they develop from endocrine rests, possibly from the pancreas or adrenal, which are foreign to the intestines, because of the endocrine grouping of the tumor cells. Others hold to the theory that they develop from the cells of Kultschitzky (1897) normally found in the gastrointestinal tract at the bases of the crypts of Lieberkuehn and which contain silver-reducing granules. These cells may belong to the endocrine system or may be neurogenic endings of Meissner's plexus at the bases of the crypts.

Argentaffinomas occur most frequently in the appendix where they are more commonly located at the tip. They have also been reported in the ileum, jejunum, duodenum, Meckel's diverticulum, stomach and gall bladder. They are small, yellowish, firm, single or multiple tumors in the mucosa or submucosa and invade other coats and lymphatic spaces. The cells are cuboidal, growing in nests or masses with a pseudoglandular arrangement and seldom showing mitotic figures.

Carcinoid tumors are not diagnosed clinically. The associated conditions such as inflammation, obstruction or hemorrhage bring the patient to the physician. Microscopically their recognition depends on the presence of argentaffin cells.

The majority of these tumors are benign in behavior. A small percentage have been reported to have metastasized to the mesenteric nodes, peritoneum, liver, diaphragm, pericardium, abdominal wall musculature, inguinal and crural lymph-nodes. There is no microscopic difference between the benign and malignant argentaffinomas.

The following case report is interesting because of the long duration of symptoms and probably longer presence of the tumor.

## REPORT OF CASE

Mr. W. S., a salesman, 56 years old was first seen January 18, 1938. He had had the usual childhood diseases. Following typhoid fever at the age of 7 years he had suffered an attack of severe abdominal pain for a day. His right eye had been removed at the age of 11 years following an accidental gun-shot wound. He had had quinsy three times during the winter of 1908-1909. Following the death of his mother in 1914 he had had a nervous breakdown and questionable heart disease. At Johns Hopkins he was informed he did not have heart disease but hyperthyroidism, emaciation and neurasthenia. During his 9 months of treatment there he suffered an attack of erysipelas, but upon leaving Johns Hopkins he had improved to the extent that he was able to return to work. For the relief of his present attacks he had had an appendectomy in 1933 but it had produced no change in his symptoms.

He has been married 32 years and his wife and 4 children are living and well.

He had complained of paroxysmal attacks of burning and sharp pain in the lower abdomen for 11 years. The first attack in 1926 did not follow any illness. The second attack occurred probably a year later and since then the attacks have become more frequent and of longer duration. At first the abdominal pain was not associated with vomiting, distention nor bowel irregularity. Later he began to have abdominal

\* Read before the American Association for the Study of Neoplastic Diseases, September 8, 1938.

distention with the paroxysmal pain, and voluntary vomiting relieved him. He has never vomited involuntarily, and his bowel function has remained regular without catharsis. He noticed a definite relation between the attacks and the time and quantity of his food, but the quality of his food made no differ-

98.6°F., the pulse rate 86, and the respiratory rate 20. The blood pressure was 144/86. On careful inspection of the abdomen after a meal a local swelling was seen to appear in the lower left quadrant, simultaneously with the onset of an attack of pain. As the pain became more severe and the patient tightened his abdominal muscles this swelling was seen to move in the form of a peristaltic wave across to the lower right quadrant where it disappeared as did the pain and muscle rigidity with a loud gurgling and burst of gas. Several similar attacks were seen, there being an interval of several minutes between attacks. Abdominal palpation between attacks was negative and during the attack was unsatisfactory because of the muscle rigidity. The borborygmi could be heard without the stethoscope. The general physical examination was otherwise negative except for the presence of an artificial right eye.

Wassermann and Kahn tests were negative. A urinalysis was normal. The hemoglobin was 74 per cent; the erythrocytes numbered 4,100,000, and the leukocytes 5,600, with 66 per cent polys and 7 per cent band and young forms.

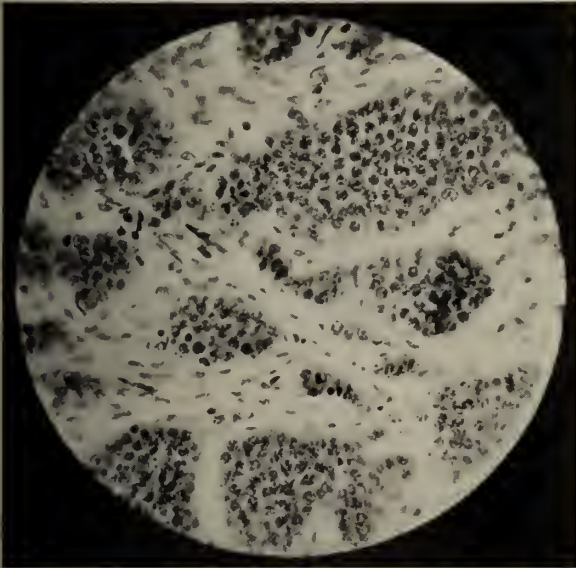


FIG. 1. Argentaffinoma of the ileum under high power and stained with hematoxylin and eosin.

ence. The onset of his attacks varied from 1 to 3 hours after the evening meal depending upon the quantity of food eaten. The severity of the paroxysmal abdominal pain gradually grew worse during the evening and reached its height of severity about 1 or 2 a.m. During the previous 2 years he had had possibly 6 to 10 attacks annually. The last attack began December 20, 1937 and persisted daily with paroxysmal pain and distention occurring every 5 to 10 minutes and lasting a half minute. In the mornings the attacks of pain did not begin until several hours after breakfast and grew more severe after each meal, being worse between 8 in the evening and 2 in the morning. Each paroxysm of pain and distention terminated with a loud gurgling of gas. During the preceding month there had been no involuntary vomiting, and his bowel function had been normal. On December 24, 1937 he entered a Washington hospital where he remained for 2 weeks. X-rays of the gall bladder, urinary system and gastrointestinal tract, including a barium enema, were reported negative, but showed the presence of 6 lumbar vertebrae. No definite diagnosis was made.

On examination the temperature was found to be



FIG. 2. Appearance with silver stain.

A gastrointestinal X-ray study was done and he remained in the X-ray laboratory an entire day so that he could be examined with the fluoroscope and films taken during his attacks of pain. Evidence of an incomplete, small, intestinal obstruction was demonstrated midway in the small intestines with fluid levels across the midportion of the abdomen.



A diagnosis of partial, small, intestinal obstruction was made, the cause of which could not be determined.

Operation was performed at Garfield Hospital on January 24, 1938 under avertin anesthesia. On opening the peritoneal cavity through a mid-left rectus incision no free fluid was found. The abdominal walls were retracted and lifted up to inspect the intestinal pattern before disturbing the viscera. In the left lower quadrant there were loops of dilated and hypertrophied small intestine. In the lower right quadrant could be seen loops of normal, but collapsed, small intestine. A loop of collapsed bowel was traced until an obstructive lesion of the ileum was found and delivered. At the site of the lesion the small intestine was rotated and angulated on its own mesentery to produce a partial obstruction. Near the base of the mesentery at this point there was a small, hard, irregular area apparently of scar tissue. Proximally for about 6 to 8 inches the mesentery showed irregular, apparently scarred areas on its surface. Distally the mesentery was normal. In the mesentery at the obstructive point there were a number of small, palpable, movable lymph-nodes of normal consistency. The small intestine proximal to the obstructive point

was dilated, its wall markedly hypertrophied and its surface quite injected. Distally the small intestine was thin-walled and collapsed. About 8 inches of ileum including the obstructive lesion and its adjacent mesentery was resected and an end to end anastomosis was done by the basting stitch technic. The abdomen was closed without drainage.

Paraffin sections of the specimen showed the typical cellular structure of "carcinoid" tumor except that there was extreme fibrosis dividing the cells into strands and lobules and distorting the pattern generally (figs. 1 and 2). While the process had the histologic appearance of an infiltrating growth it is probable that it was rather a chronic inflammatory reaction in the area of an argentaffin tumor. However, the fact that a certain proportion of these tumors become malignant and metastasize had to be considered, particularly in view of the distortion described and its location in the ileum.

Convalescence was entirely uneventful and the patient left the hospital 16 days after operation. Seven months after operation he was perfectly well and asymptomatic, and had returned to work.

ABSTRACT OF PAPER READ BEFORE THE ANNUAL SCIENTIFIC ASSEMBLY OF THE SOCIETY, APRIL 27, 1939

"ANORECTAL FISTULA." Garnet W. Ault, M.D., Professor of Proctology, Georgetown University School of Medicine.

The development of either a simple or a complicated fistula is usually as follows: (1) Infection of a crypt of Morgagni at the level of the pectinate or dentate line; (2) Burrowing and extension of the infection through any or all of the perianal structures; (3) Active supuration, necrosis and abscess formation; (4) Spontaneous or surgical drainage forming a complete fistula.

The diagnosis during various stages is as follows:

A. *Abscess Stage*:—Any patient with an abscess of the anus should be considered to have a fistula until proven otherwise. Incision and drainage of the abscess is indicated. The patient should be told of the possibility of a fistula and he should be watched for persistent drainage from his old abscess cavity.

B. *Draining Sinus Stage*:—Chronic recurrent drainage from a "pimple" or sinus opening at the anal margin is diagnostic of anorectal fistula providing pilonidal sinus and, more rarely, presacral abscess and tumor are eliminated.

Identification of an internal primary opening into

the anorectal canal is most readily accomplished by the general practitioner if he will inject a dye through the external opening. An alcoholic solution of gentian violet with 25 per cent peroxide is most efficacious. With the anoscope in place, the escape of the dye will identify the internal opening. A hook-shaped fine silver probe may also be used to identify the internal opening if the patient is less sensitive to pain.

Surgery offers the best method of treatment of anorectal fistula. Three principles of treatment should be observed:

1. Adequate drainage of all fistulous tracts. This requires wide incision and excision of all overhanging tissues so as to create a "soup plate" shallow type of wound. This wound is allowed to heal by granulation as primary suture invariably results in wound infection and delayed healing followed by an unsatisfactory result.

2. Identification and proper incision of the internal primary opening of the fistula. This means that the primary internal opening which is actually "feeding" this fistula must be laid open. It usually involves a portion of the musculature which cannot be cut across more than once at any one time. It should be cut at right angles. When two or more internal openings are present in a double fistula, the highest one is done first.

(Continued on page 254)



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### THE NEWEST OF THE VITAMIN FAMILY (K)

In the past few years astounding progress has been made toward complete understanding of the tendency to abnormal bleeding which occurs in obstructive jaundice and some other disease conditions. It has been shown that this tendency may originate in a lowering of blood prothrombin due to deficiency of vitamin K. Such a state was first described by Dam<sup>1, 2</sup> in connection with a hemorrhagic diathesis of chicks fed on a diet deficient in certain fat soluble compounds. He found that the tendency of the chicks to abnormal bleeding could be controlled by administering a substance found in alfalfa, called by him the "koagulations vitamine."

The application of Dam's findings to the treatment of disease in human beings followed the demonstration by Quick<sup>3</sup> that the blood of jaundiced patients may be deficient in prothrombin. Hawkins and Brinkhous<sup>4</sup> proved a similar deficiency to be present in dogs with complete biliary fistula. From these two reports, and

others substantiating them, has come the knowledge that lowering of prothrombin may develop from interference with one or more of four factors necessary in the prevention and control of deficiency of vitamin K. These four basic factors are (1) the presence of bile of normal composition in the intestinal tract to allow absorption of vitamin K, (2) a liver which is physiologically capable of utilizing the vitamin to form prothrombin, (3) a diet containing the vitamin, and (4) a normal absorptive surface in the small intestine.

Early in 1938 there were reports from two independent sources<sup>5, 6</sup> on work done in the extension of the study to treatment of patients with obstructive jaundice and diminished blood prothrombin by administration of vitamin K and bile. It has been found that such patients receiving this treatment derive an increase in blood prothrombin and a consequent loss of tendency to abnormal bleeding. The value of such treatment to the jaundiced patient is self-evident, particularly as part of the preparation for surgical operation.

Quite recently investigations at the Mayo Clinic<sup>7</sup> have demonstrated that a number of other disease conditions may alter the metabolism of prothrombin so profoundly that spontaneous hemorrhage may ensue. These include intestinal obstruction, intestinal fistula, gastric retention, sprue, colectomy, and chronic ulcerative colitis. In all these conditions administration of vitamin K and bile salts by mouth or enterostomy tube and of vitamin K alone by intramuscular injection is a means of specific treatment of the associated deficiency of prothrombin.

Coincidentally with clinical studies of the vitamin, progress has been made in its manu-

<sup>1</sup> Dam, H.: *Nature*, 1934, **133**, 909.

<sup>2</sup> Dam, H.: *Biochem. J.*, 1935, **29**, 1273.

<sup>3</sup> Quick, A. J., Stanley-Brown, M., and Bancroft, F. W.: *Am. J. M. Sc.*, 1935, **190**, 501.

<sup>4</sup> Hawkins, W. B., and Brinkhous, K. M.: *J. Exper. Med.*, 1936, **63**, 795.

<sup>5</sup> Snell, A. M., Magath, T. B., Boland, E. W., Osterberg,

A. E., Butt, H. R., Bollman, J. L., and Walters, W.: *Proc. Staff Meet., Mayo Clin.*, 1938, **13**, 65.

<sup>6</sup> Warner, E. D., Brinkhous, K. M., and Smith, H. P.: *Proc. Soc. Exper. Biol. & Med.*, 1938, **37**, 628.

<sup>7</sup> Clark, R. L., Jr., Dixon, C. F., Butt, H. R., and Snell, A. M.: *Proc. Staff Meet., Mayo Clin.*, 1939, **14**, 407.

facture and in the knowledge of its physical and chemical properties. It is prepared commercially as a concentrate extracted by petroleum ether from alfalfa and assayed biologically by its effect on chicks previously fed on a diet deficient in the vitamin. The dosage of this alfalfa concentrate varies somewhat because of its comparative impurity and because of individual differences in cases treated. Butt, Snell and Osterberg<sup>8</sup> report that it is more effective when given by mouth than parenterally. They recommend the following daily doses for jaundiced patients:

1. For prophylactic use in patients with a normal prothrombin time and for whom surgery is contemplated—400 to 1200 mg. of alfalfa concentrate and 1 to 2 Gm. of animal bile salts.
2. For patients with a high prothrombin time much larger doses and for patients actively bleeding 1 to 2 Gm. of alfalfa concentrate and 2 to 4 Gm. of a water soluble bile salt in 250 to 500 c.c. of warm physiologic saline solution by means of a duodenal tube.

In the past few months several groups of investigators<sup>9,10,11,12,13,14,15,16</sup> have independently reported studies of the chemical nature of vitamin K. It has been shown that there probably is a homologous series of antihemorrhagic substances obtainable from widely different sources and all having the structure of

naphthoquinones. One such substance is phthiocol, the pigment of *Mycobacterium tuberculosis* (2-methyl-3-hydroxy-1,4-naphthoquinone). Good evidence has been presented by MacCorquodale et al<sup>15</sup> that the antihemorrhagic substance in alfalfa concentrate is 2-ethyl-3-phytyl-1,4-naphthoquinone, which they have found to be more potent than any other synthetic naphthoquinones studied.

It seems likely that in the near future one member of the series of synthetic naphthoquinones will be adopted that fulfills the important requirements for commercial production. When this has been accomplished the advantage of more accurate dosage of the antihemorrhagic substance will naturally accrue, and biological assay will no longer be necessary.

## WHO GUARDS THE PUBLIC HEALTH?

The effectiveness of carefully planned and widely disseminated publicity is demonstrated by the general belief that official and private health agencies are the sole guardians of the public health. There is no desire on our part to withhold credit where it is due, and certainly health agencies of this country are deserving of high praise. In our opinion, an efficient health department is essential to every community. Of slightly less importance are voluntary agencies sponsored by groups of civic-minded citizens who, in one way or another, seek to better health conditions. Splendid as have been their accomplishments it does not warrant the assumption that they are solely responsible for the safeguarding of public health.

Unfortunately, too few realize that the first line of defense of public health is the private medical practitioner. Each day he practices preventive medicine far more extensively than is generally recognized. Physical examinations which he does routinely disclose to him diseases in their incipient stage, most of which he finds possible to "cure." How many persons he immunizes against contagious diseases, of course, is not known, but their number is great. Prenatal

<sup>8</sup> Butt, H. R., Snell, A. M., and Osterberg, A. E.: *Proc. Staff Meet., Mayo Clin.*, 1938, **13**, 753.

<sup>9</sup> McKee, R. W., Binkley, S. B., MacCorquodale, D. W., Thayer, S. A., and Doisy, E. A.: *J. Am. Chem. Soc.*, 1939, **61**, 1295.

<sup>10</sup> Almquist, H. J., and Klose, A. A.: *Ibid.*, 1939, **61**, 1611.

<sup>11</sup> Almquist, H. J., and Klose, A. A.: *Ibid.*, 1939, **61**, 1923.

<sup>12</sup> Fernholz, E. and Ansbacher, S.: *Ibid.*, 1939, **61**, 1934.

<sup>13</sup> Fieser, L. F., Bowen, D. M., Campbell, W. P., Fieser, M., Fry, E. M., Jones, R. N., Riegel, B., Schweitzer, C. E., and Smith, P. G.: *Ibid.*, 1939, **61**, 1925.

<sup>14</sup> Fieser, L. F., Bowen, D. M., Campbell, W. P., Fry, E. M., and Gates, M. D., Jr.: *Ibid.*, 1939, **61**, 1926.

<sup>15</sup> MacCorquodale, D. W., Binkley, S. B., Thayer, S. A., and Doisy, E. A.: *Ibid.*, 1939, **61**, 1928.

<sup>16</sup> Thayer, S. A., Cheney, L. C., Binkley, S. B., MacCorquodale, D. W., and Doisy, E. A.: *Ibid.*, 1939, **61**, 1932.

and postnatal care he renders as a matter of course. He is also an integral part of any public health program. No matter how efficient a health department may be, the degree to which he lends his support and coöperation is the difference between success and failure.

In view of this situation it is surprising how little is said about the role of a private practitioner in the public health field. Perhaps the average citizen has not been aware of him, since the press has been remarkably silent on the subject. It is true that health officials have recognized the value of physicians' services and the need for their assistance. However, they too have been reticent about the whole matter.

There would be no point in emphasizing these facts were it not that some public officials seem to be under the impression that expansion of public health facilities—national, state and local—will somehow of itself assure all citizens the necessary preventive medical care. An investigation of the present situation will disclose the fallacy of this belief and politicians may well take note that despite all the high-powered publicity the private practitioner of medicine is indispensable to any public health program.

#### NEXT?

A news dispatch from San Francisco dated July 10 quotes U. S. Solicitor General Robert H. Jackson as saying to the American Bar Association Convention that lawyers must arrange a cut rate service for wage earners or risk government control of their profession. "Our bar," Mr. Jackson is quoted as saying, "cannot claim to be discharging its full duty to society by rendering service that is out of reach of an increasing proportion of our people." He is reported as declaring that the high cost of legal services might cause the government to intervene, saying that "something like this has happened to the medical profession."

Mr. Jackson said that the very poor get legal services through public agencies and that the well-to-do can hire good lawyers; "but there are

millions of people who belong to neither the well-to-do nor the very poor. Their scale of earning will not let them pay so much for legal services as the modern lawyer charges.

"Their need is not a charity agency but a low-cost legal service.

"I have grave doubts that society will continue to support idle lawyers (on the W.P.A.) and at the same time go without their service once it wakes up to what it is doing." He declared that the American Bar Association could "if its professional organization were strong enough and so willed, organize within the profession itself privately managed, but self-sustaining, low-cost, high-volume legal services.

"In default of our attention, this problem will be likely to be forced upon the government."

Such utterances have a strangely familiar ring to the physician. Needless to say, they occasion no surprise, because it was clear to many physicians that "something like this" would confront other professions.

Next?

#### PAREDRIE IN THE TREATMENT OF HEART DISEASE

Recently a study<sup>1</sup> of the action of paredrine (parahydroxyphenylisopropylamine) on the heart has been reported. This drug is a synthetic epinephrine-like compound having certain advantages over epinephrine and ephedrine in the treatment of heart disease. It is effective on oral administration, acts with greater intensity than ephedrine, and does not produce unpleasant side effects due to central nervous stimulation.

The therapeutic indication for paredrine in heart disease is the same as for epinephrine, mainly the prevention and treatment of cardiac standstill. A dose of 40 to 60 mg. three or four times a day is recommended in the treatment of heart-block.

<sup>1</sup> Nathanson, M. H.: *Ann. Int. Med.*, 1939, 12, 1855.



## EXPERT MEDICAL TESTIMONY

CHARLES S. BAKER, *Counsel for The Medical Society of the District of Columbia,*  
AND WARREN E. MAGEE, *Washington*

The terms "expert testimony" and "expert witness" are very familiar to virtually all physicians and to many laymen.

The meaning of these terms is, however, more or less obscure. Like the term "specialist" we have a general idea of what is meant but find it difficult to define or describe.

A case in the Supreme Court of the United States, many years ago, held that "an expert witness is one possessed of special knowledge or skill in respect of the subject upon which he is called to testify." (99 U. S. 645)

In a Texas case it was said that "experts are persons selected by the Courts or parties to a cause on account of their knowledge or skill to examine, estimate, and ascertain things and make a report of their opinion." (3 Tex. App. 156)

From another angle "an expert witness has sometimes been defined to be a witness who testifies to conclusions from facts while an ordinary witness testifies only to facts." (60 Cal. 581)

The term "expert" from "experti" signifies "instructed by experience." This definition is perhaps too narrow, for there may be individuals possessed of a high degree of knowledge not derived from, perfected, nor enhanced by practical experience.

Testimony of an "expert" to be admissible must concern a subject of a scientific or exceptional nature which requires explanation by one possessing peculiar knowledge in order to render it intelligible to the comprehension and understanding of ordinary men.

In many cases Courts and juries are obliged to decide issues of a scientific or specialized nature. These can be determined intelligently only when examined and analyzed by an "expert." In other words, they cannot be reasonably and intelligently analyzed upon the simple basis of common sense and practical experience in the ordinary affairs of life.

In such instances, witnesses possessing special or "expert" knowledge and skill are called upon to testify. Their testimony may refer not only to the facts involved in the particular case but may represent their opinions as to matters or conditions involved in or affected by the facts.

### PURPOSE OF EXPERT MEDICAL TESTIMONY

The object of any trial is to determine or decide certain issues between the parties to a case. In other words, the party or parties on the one side allege that certain facts warrant certain conclusions. The party or parties in opposition deny the facts thus alleged in whole or in part and thus the issue or issues are raised.

When the case is tried, witnesses to the occurrence (facts) are called by both parties. They usually testify as to what they have seen, heard or done. What they may think or infer or conclude is not admissible for obvious reasons. They are there to furnish the facts. The Court or the jury determines the proper conclusions which should be drawn from the facts.

However, when matters of a scientific or specialized nature are involved, an exception to the rule is made and the opinion testimony of "experts" is admitted to assist the Court or jury to form a correct and intelligent conclusion.

The facts in the case then must be considered by an "expert." He, in turn, will express an opinion to the Court or jury concerning the facts developed by the testimony.

With this expert assistance in analyzing, defining and appraising the facts, the Court or jury is able to reach a logical conclusion.

The necessity for such "expert testimony" is easily illustrated. Persons untrained in a highly specialized subject, such as that of medicine, are not qualified to form a diagnosis or a prognosis based upon symptoms testified to by laymen. Thus, we seek the opinions of physicians to aid and assist the Court and jury

in drawing the necessary conclusions from the factual evidence developed.

#### QUALIFYING AN EXPERT MEDICAL WITNESS

Because of the peculiar nature of the testimony given by an expert witness, he must be "qualified" as an expert in the particular field or specialty indicated by the facts of the case.

Thus, in a case involving some routine, general, physical disturbance of a common type, the expert would be qualified as a "general practitioner." In a case involving an alleged injury to the brain we should qualify the physician as a neurologist, an alienist, or one who specializes in diagnostic or operative procedure of the brain.

In the event of injuries to the bony structure of the body, the medical witness should qualify as an expert in orthopedics.

In other words, to qualify as an expert, the physician should show broad study or experience in the exact field indicated by the facts.

One must appreciate, however, that there is no exact line of demarcation between the various branches of medical research, and the qualifications of a medical witness are seldom questioned, except in mental cases, providing he shows that he is a duly licensed practicing physician and that his study has qualified him generally to comment upon medical facts. However, the weight to be given to expert testimony is greatly affected, in difficult situations, by showing a broad training and experience in the immediate and limited field in question.

#### ATTITUDE OR APTITUDE OF THE MEDICAL WITNESS

The physician, by virtue of his routine experience, is inclined to think deeply but say little as a witness. It is essential that he think deeply but equally essential that he express and explain in considerable detail, the mental processes by which he arrives at his conclusions. Many times the ablest physician makes an unimpressive

witness. It may be said in passing that the reverse, perhaps unfortunately, is likewise true.

So too, the expert witness must remember that a jury is composed of laymen who may be impressed but who will never be convinced by medical terms which they do not understand. Dr. Oliver Wendell Holmes wisely suggested that "the less pretention you make, the better they will like you in the long run. . . . There are professors in this country who ligate arteries, other surgeons only tie them and it stops the bleeding just as well."

If a physician testifying as an expert witness finds it necessary or desirable to use technical words or expressions, they should be immediately explained before testifying further.

In this connection it must be remembered that the jury must first understand and in the second place that the jury must remember. Thus, the witness must carefully and thoroughly analyze and explain his position to the jury. At the same time, he must do it in such a manner as to impress his conclusions indelibly upon their memory. Otherwise, in the cumulative testimony which follows, his efforts are likely to be neutralized or forgotten.

One unusually capable medical witness makes a regular practice, when he is confronted with the most critical question of the case, of going to the blackboard in order to impress the jury through the use of explanatory drawings. That which the eye discerns is remembered far more easily than that which the ear detects.

#### SUGGESTIONS TO THE WITNESS

To testify is said to be "in every sense an ordeal." It requires calmness, intelligence, courage and the ability to remember clearly, but all of these virtues must be "topped" by the ability to "get the story across" in a satisfying and convincing manner.

In order to accomplish this purpose, the witness must be prepared. Many witnesses possess all of the above qualifications but fail to make the necessary impression because they deal with

the jury as they do with a consultant. One of the commonest faults of the expert witness is failure to review the facts carefully before taking the stand. Many times this is the fault of the lawyer as well as the witness.

On numerous occasions cases are lost or injured because of an attitude of indifference or a "foggy" memory, which the witness may think indicative of lack of bias. The jury, however, does not excuse indifference or failure of memory on essential points. In this connection, the common use of "office notes" is advisable as an "aid to memory." Such "office notes," however, should never be read to the jury as representing the "length and breadth" of the knowledge and observation of the witness.

#### POINTS TO KEEP IN MIND

In preparing for the witness stand and in testifying certain principles should be kept constantly in mind.

First, the witness should refresh his recollection and be prepared.

Second, the witness should ponder the facts and decide how they can be most persuasively explained to the jury.

Third, the witness should give his testimony in a natural, fearless, frank but modest, and friendly manner.

Fourth, the witness must tell the truth and the whole truth.

Fifth, a fact or conclusion should be given without bias. One very competent witness in order to convince the jury of his fairness often overemphasizes some point inimical to his side of the case, with results as disastrous as where he shows definite bias in favor of his "sponsor."

Sixth, a witness should listen carefully to the questions and his answers should be definitely responsive. Volunteer remarks create antagonism and often result in a reprimand by the Court because improper.

Seventh, the witness should be calm, courteous and maintain his equilibrium under all circumstances. A witness who shows a friendly, pleasant attitude toward his sponsor, replying

readily to all questions, and then becomes cautious, careful, and irritated or angry upon cross-examination, is a witness whom all lawyers seek to avoid. A calm and courteous answer to an irritating or insulting question wins friends among the jury.

Eighth, the witness must make himself easily heard by all members of the jury. The reason for this is obvious. What cannot be heard cannot be understood and is a source of irritation to Judge and jury.

Ninth, the witness should listen carefully to and analyze all questions. This is particularly true of long hypothetical questions. Unfortunately, such questions are sometimes framed as a trap for the unwary or pompous witness.

#### CONCLUSION

Many pages might be written on any one of the above points. These few paragraphs, however, will serve at least as a guide.

With these suggestions in mind, there is one general concept which the witness should never lose sight of. As expressed by Mr. Stryker, counsel for the Medical Society of New York, "the art of giving testimony, like all arts, is good in proportion to its artlessness."

Perhaps this might be expressed in another way. Every Court room is in effect a theater. The witness is the actor. The jury is the audience.

The jury is there to get the facts. But a jury will not retain the facts for long unless they are presented in an appealing and sympathetic manner.

While there should be no display of uncontrolled emotion, the jury should be made to feel that the witness is by no means devoid of emotional potential.

It is common knowledge that most physicians dislike to testify. This feeling, however, seems to arise from lack of Court room experience, or from failure to observe some of the above simple suggestions.

The physician-witness who is mindful of the



"rules of the game" finds it an interesting and helpful departure from his routine work.

### READERS EXPRESS THEIR OPINION

The success of a medical journal is in no small measure due to the fact that the Editor and his staff have accurate information on the likes and dislikes of their readers. The difficulty lies in ascertaining with any degree of accuracy what these are. With all its faults, the questionnaire method seems the most satisfactory means by which this can be determined. It was therefore adopted by the editorial staff of the MEDICAL ANNALS when the Society's membership was recently canvassed to learn its opinion of the ANNALS and to obtain suggestions as to how it could be improved.

A tabulation of the results of the canvass was recently made and a resumé is submitted herewith.

|                               |     |
|-------------------------------|-----|
| Completed Questionnaires..... | 144 |
| Letters.....                  | 2   |
|                               | —   |
| Total Returns.....            | 146 |

Questions were answered as follows:

|                                                                                    |    |
|------------------------------------------------------------------------------------|----|
| <i>Are you a "cover-to-cover reader of the MEDICAL ANNALS?"</i>                    |    |
| Yes.....                                                                           | 64 |
| No.....                                                                            | 66 |
| Occasionally a "cover-to-cover" reader ..                                          | 6  |
| Almost a 100 per cent "cover-to-cover" reader.....                                 | 8  |
| <i>If not, which of the following interest you?</i>                                |    |
| Scientific articles.....                                                           | 88 |
| Editorials.....                                                                    | 77 |
| President's Message.....                                                           | 51 |
| Articles on medical economics, social problems and others of a general nature..... | 58 |
| News and Personals.....                                                            | 55 |
| Announcements of Meetings.....                                                     | 52 |
| Book Reviews.....                                                                  | 35 |

*What material, not now published, would you like included?*

Among the suggestions received were the following:  
Abstracts of—

- Articles of interest in leading American and foreign medical journals
- Papers read at different medical clubs
- Notices of judgment of the Food and Drug Ad-

ministration when food and drugs shipped into Washington are involved

#### Business Affairs of Society

Digest of business transacted by Society at its meetings

Addition of "Officers Section" similar to one in Pennsylvania Journal

#### Committee Activities

Reports of activities of committees of Society

#### Medical Economics

More emphasis on medical economics and social problems

#### News in General

Relating to—

Work being done by United States Public Health

Service and other related Government agencies

School health work

Health Department activities

Medical schools and hospitals (hospital staff appointments and meetings)

Activities of agencies such as Council of Social Agencies

#### Personals

More personals and coverage of social activities

#### Specialties

More articles of pediatric interest

Recent advances in various specialties

More papers on gastrointestinal subjects

#### Statistics

Fetal mortality, maternal welfare, especially following various types of anesthetics, sedatives, etc., given during labor

Public Health Reports; prevalence and outbreak of contagious and communicable diseases

#### Scientific Material

Symposiums on recent advances in medicine such as sulfanilamide, vitamins, etc.

Page or two devoted to a brief summary of pertinent facts of new medicine, new devices, instruments and other material of interest to medical men, such as Lindbergh Heart, the iron lung, etc.

Resumé of important discoveries in therapy, drugs, diagnoses, etc. Status of different drugs with results of investigation, such as Estron in arthritis.

Report of clinical pathologic conferences in full size print as is done in the New England Journal of Medicine

Reports of experimental work on basic physiology, such as vitamins, blood, endocrines, etc.

Therapeutics and treatment of cases (more detailed discussion of actual therapy)

Case reports from local hospital conferences, with discussions

Additional case reports from practice

Material similar to that published by the Diplomate of the National Board of Medical Examiners

Symposia on various subjects to appear in four issues of ANNALS per year

Critical review of work done throughout the world on problems of disease—medical and surgical

More undergraduate discussions as Dr. Yater's article on Fundamentals of Internal Medicine

Reviews on other subjects similar to one by Dr. Schneider on The Nervous System published several years ago

More articles similar to the article on cardiac diagnoses, treatment, etc., by Dr. Yater published some time ago

More papers showing a broad grasp on a special field, such as Dr. Horwitz's article on Chronic Appendicitis

#### Miscellaneous

Anecdotes, humorous stories, jokes

Biographies of out-of-town speakers

Increased illustrations

More published papers given by prominent guest speakers before the Society

#### *What material would you omit?*

Pathologic conferences. It is too small a journal for articles related to rare diseases; highly specialized articles should be eliminated.

Trite essays on "text book" subjects which are fairly common knowledge to everyone

Abstract rather than give in full some of the scientific articles

Non-scientific literature

#### *Do you like the appearance of the ANNALS?*

Yes..... 120

No..... 7

#### *Do you think the layout of text matter is attractive?*

Yes..... 120

No..... 2

#### *General Comments*

I have only commendation for the journal.

I think MEDICAL ANNALS is all right and I have no suggestions or comments to offer. It is a fine journal.

I feel an excellent journal is being published and enjoy reading it.

I preserve all copies and have occasion to refer back to them.

I think that the editorial staff of the ANNALS has been doing its work exceedingly well. I am satisfied.

It is superior to many similar publications of the larger state societies.

It is my opinion that the ANNALS is well edited and

is a very satisfactory journal and representative of The Medical Society of the District of Columbia.

I think most of us are just careless and entirely unappreciative of the great amount of time and work required to get the ANNALS up.

I think you are doing fine but there is so much published now-a-days that one cannot absorb it.

I enjoy reading the ANNALS more than any other journal.

This is what one Professor of Pharmacology said to whom I sent a reprint from MEDICAL ANNALS: "The Medical Annals of the District of Columbia has turned out to be an excellent journal. You must have a splendid group managing it."

A fine job—don't rock the boat.

While I am not active in practice, I do read medical journals to keep familiar with the medical and surgical advances. I think the editor and his associates have done a fine job and are to be congratulated.

While the scientific articles are of a high class there is much of the ultra about them and not always of general interest.

Material should represent more original work and less papers on personal aggrandizement over therapeutic victories.

News of local society activities should be complete—very spotty at present.

I think there should be a little greater cross section of articles on surgery as well as medicine.

My only suggestion would be in reference to the printing and publication of the ANNALS. If practicable, it should be printed in the District of Columbia.

The editorial staff of the MEDICAL ANNALS is deeply appreciative of the frankness of members who responded. Where it is found possible, it will adopt the suggestions which have been made. Obviously, not all of the constructive suggestions can be carried out, worthy though they may be. The matter of cost is a factor which must be taken into account and some of the recommendations would require considerable expenditure of funds.

On the basis of the questionnaires returned, it appears that the MEDICAL ANNALS in its present form is satisfactory to the majority of the Society's membership. This is, of course, encouraging to the editors, who wish to assure their readers that every effort will be made not

only to maintain high standards but to improve the publication.

## NEWS AND PERSONALS

**The American Congress on Obstetrics and Gynecology**, sponsored by the American Committee on Maternal Welfare, will be held in Cleveland, Ohio, September 11-15, 1939. The membership fee is \$5.00, which includes membership in the American Committee on Maternal Welfare and registration for the American Congress on Obstetrics and Gynecology. Application blanks and further information may be secured from the Chairman of the State Membership Committee, Dr. J. Bay Jacobs, or from the American Congress on Obstetrics and Gynecology, 650 Rush Street, Chicago, Illinois.

A distinguished audience of more than five hundred persons heard **Senator Robert A. Taft** of Ohio praise the initiative and scientific advances made by the medical profession at cornerstone laying ceremonies for the new **Doctors' Hospital**, 1815 Eye Street, N.W., held at noon Tuesday, July 11, 1939.

**Dr. Charles Stanley White**, President of the Hospital, presided at the ceremonies and handled the trowel for the laying of the cornerstone in the southeast corner of the structure adjacent to the Washington Medical Building.

Just what should be placed in a cornerstone is an age-old problem. The following is a list of the articles contained in a large metal cylinder placed within the cornerstone by **Dr. Oscar B. Hunter**, Secretary of the Corporation: U. S. coins of the day, copies of all newspapers, including the *Alexandria Gazette* (the oldest newspaper in the United States), the *Journal of the American Medical Association*, the *Medical Annals of the District of Columbia*, *Bulletin of the District of Columbia Dental Society*, a Bible and various records pertaining to the organization and construction of The Doctors' Hospital.

The Doctors' Hospital project was praised highly by Senator Taft. He explained that the hospital was a privately financed project without Government aid, and said, "I enjoy the opportunity of praising the initiative of the medical profession of the District on working out its own problem without laying down on the Government. The construction of this Doctors' Hospital here in Washington shows

that the large part of our problem may be met without pouring out more millions from the Federal Treasury and without turning over to some state or federal official the entire determination of who shall receive hospitalization and when he shall receive it; and the hospital plan ought to be worked out deliberately to encourage philanthropic persons to invest their own money in the expansion of private hospital service, as they have so liberally invested it during the past fifty years."

The members of the 1938-39 **Resident Medical Staff of the Garfield Memorial Hospital** were guests of honor at a luncheon tendered them by the Attending Staff on Wednesday, June 21, at the Hospital. Speakers were Dr. F. J. Eisenman, Superintendent, Dr. A. B. Bennett, President of the Association of Former House Officers of the Garfield Memorial Hospital, and Dr. H. C. Macatee, Chairman of the Attending Staff, who presented certificates to the following members of the Resident Staff:

Drs. William H. Breeden, Albert Bright, Frank Cawley, L. Marshall Cuvillier, Jr., Thomas Dugan, John H. Hazard, H. Franklin Kreuzberg, Wilkins R. Manning, Garner Meads, Samuel T. Moore, Robert Burwell Nelson, Jr., Blanche Nimetz, John A. Norcross, and Hopkins Stirling.

Drs. A. B. Bennett, A. D. Daughton, and E. Clarence Rice were in charge of the arrangements.

**Dr. J. Winthrop Peabody** resigned his post as general superintendent of the **Tuberculosis Sanatoria** at Glenn Dale, Maryland, to become chief visiting consultant on August 2, 1939. Dr. Peabody has watched the District's facilities for tuberculosis treatment grow under his administration from 90 beds in the old institution at Fourteenth and Upshur Streets, N.W., to more than 900 beds at Glenn Dale.

**Dr. Daniel Leo Finucane**, former assistant superintendent, succeeds Dr. Peabody. Dr. Finucane has been associated with Dr. Peabody for 15 years.

Dr. Peabody was recently appointed Chairman of the Medical Society's Subcommittee on Tuberculosis.

**Drs. Grace Purse** and **Francis Threadgill** were the first volunteers to serve at the **Washington Self-Help Exchange**. Dr. Purse was on service from June 15 to July 15 and Dr. Threadgill from July 15 to August 15.



Additional volunteers have submitted their names to the Society's office since the membership was canvassed. More physicians in general practice, however, are needed. General practitioners who have not volunteered and who find it possible to assist with this project are urged to do so.

The Society's **Speakers' Bureau** furnished speakers on cancer for five groups of W.P.A. workers of Washington during the week beginning Monday, July 31. The speakers were Drs. Truman Abbe, Francis Threadgill, George Tolstoi, John Warner and R. R. Rathbone.

**Dr. John W. Warner** has been appointed chairman of the Doctors' Division for the 1939 Roll Call of the District of Columbia Chapter of the American Red Cross.

**Dr. Arthur C. Christie** addressed the Tennessee Valley Postgraduate Medical Association at Knoxville, Tennessee, on June 29, 1939. His subject was "The Diagnosis and Management of Cancer of the Breast."

**Dr. Eugene R. Whitmore** spoke before the Annual Meeting of the Eleventh Councilor District of the Medical Society of the State of Pennsylvania in Uniontown, Pennsylvania, on July 19, 1939. His subject was "Chronic Cystic Mastitis and Carcinoma of the Breast."

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### **Everett Monroe Ellison, M.D.** (1879-1939)

Dr. Everett Monroe Ellison, an Active Member of the Medical Society since 1914, died of a heart attack July 24, 1939 in Mexico where he had been vacationing.

Dr. Ellison was born in Parrottsville, Tennessee, on March 2, 1879. He received his A.B. degree from U. S. Grant University at Athens in 1901 and his A.M. in 1903. His M.D. degree was obtained from George Washington University in 1912 and his Ph.D. in 1925. He had taught in the Philippine Islands from 1904 to 1907. Since coming to Washington in 1907 he had been a member of the visiting staffs of Gallinger and George Washington

University Hospitals and other local medical institutions.

Dr. Ellison was prominent in temperance, educational, philanthropic and club work, maintaining his office and home at 1720 M Street, N.W. His medical affiliations included fellowship in the American Medical Association and membership in the George Washington Medical Society. Dr. Ellison was a member of the board of managers of the Y.M.C.A., was on the official board of the Foundry Methodist Church, president of the United Dry Forces for the District of Columbia, member of the medical department of the District National Guard, trustee of Southeastern University and Tennessee Wesleyan College, and president of the Gospel Mission. He was one of the founders and a past president of the Clinical Club, and had served as president of the Citizens' Service Association for Law and Order. At the time of his death Dr. Ellison had been attending an international convention of Loyal Knights of the Round Table, of which he was a past president.

Surviving are his widow, Mrs. Fannie May Ellison, whom he married in 1930; three daughters, Alice Elizabeth, Margaret Isabel and Nancy Doris Ellison, children of his first marriage to Alberta Bayne Hunt of this city, who preceded Dr. Ellison in death. Three brothers also survive, Newell W. Ellison of Washington, Thaddeus S. Ellison of Parrottsville, Tennessee, and William B. Ellison of Lenoir City, Tennessee, and two sisters, Mrs. Sarah Bell LaRue, Parrottsville, Tennessee, and Mrs. Sydney Lenora Jones, Harriman, Tennessee.

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(Continued from page 244)

Very high-lying internal openings that burrow through a considerable portion of the musculature should be done in two stages by the Seton method. The balance of the muscle can be divided 2 or 3 weeks later.

3. Avoidance of prolonged and unnecessary packing of the wound. The packing or dressing in any fistula should be removed within 48 hours. Unsatisfactory healing and a greater incidence of poor control will result from prolonged packing. Sitz-baths and warm dressings aid in maintaining a clean wound. The index finger or an applicator with ointment should be drawn through the wound every few days to prevent bridging.

# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

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VOLUME VIII

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NUMBER 9

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### PHENOLPHTHALEIN ERUPTIONS

#### REPORT OF THREE CASES

I. LEWIS SANDLER, M.D., *Assistant Professor of Dermatology and Syphilology, Georgetown University School of Medicine*

There are many agents containing phenolphthalein. Belote and Whitney<sup>1</sup> published a list of 103 frequently used medicinal preparations containing this substance. Phenolphthalein may be found as coloring matter in foods, drinks, mouth washes, lotions of a pink color, sodium perborate used for the mouth and for douches, toothpastes, and even iced cup cakes.<sup>2</sup>

Reactions may be produced not only in the skin but in the mucous membrane, the gastrointestinal tract and the conjunctivae.<sup>3, 4</sup> Fixed lesions may appear in the genital or perianal regions. In these areas the lesions may be bullous or erythematous patches. An erythematous discoloration may appear under the finger nails.<sup>5</sup> Systemic reactions such as chills and fever have been reported.<sup>6</sup>

The usual types of eruptions due to phenolphthalein are (1) urticarial eruptions, (2) erythema multiforme-like eruptions, (3) fixed and circumscribed, erythematous or bullous and polychromatic pigmented eruptions.

This substance is one of the agents which will produce a fixed drug eruption, e.g., repeated recurrences in the previously affected pigmented areas when the drug is subsequently admin-

istered. These localized areas of pigmentation may persist indefinitely, but usually gradually disappear when the drug is discontinued. This fixed eruption, which is purplish or brownish blue, appears in areas which are indistinguishable both anatomically and functionally from unaffected locations.

In one of my cases the lesions were definitely localized around senile keratoses.

Naegeli<sup>7</sup> reported localization about an insect bite, vascular nevus and healed herpes zoster. Fixed lesions have appeared at the site of a scar from a burn.<sup>8</sup>

Sections of skin show an increase in the amount of pigment in the basal layer and an increase in the number of chromatophores in the dermis. By the "dopa" reaction it has been proved that this increased formation of pigment takes place in the basal layer and is due to melanin.<sup>6</sup>

This fixed drug eruption appears only as a result of the ingestion of the drug and recurs only after the internal administration of the particular agent. "The theory that many drug eruptions including the fixed type are of an immunobiologic nature may be accepted on the evidence thus far submitted. Cutaneous sensi-

tization is established and the subsequent use of the drug reproduces the signs of hypersensitivity. It is interesting to note that the cutaneous manifestations can usually be made to reappear by doses below the usually effective pharmacologic dose."<sup>9</sup> No known antibodies have been observed.<sup>10</sup>

After the use of patch tests with phenolphthalein and intradermal injections of the drug, Wise and Sulzberger<sup>11</sup> concluded that "the existence of eczematous hypersensitiveness could be demonstrated neither in normal nor in previously affected skin in 3 cases of fixed phenolphthalein eruption. These results speak against the epidermis or the superficial layers of the cutis as being the seat of this form of hypersensitiveness." In this same article the authors report a most unusual experiment. "After the ingestion of phenolphthalein in a typical case of fixed eruption, the previously affected skin, grafted on and occupying a site which had not heretofore presented signs of hypersensitiveness, remained normal. In contrast to this, a graft of heretofore normal skin did react, producing a typical lesion when grafted on a site previously hypersensitive. In other words, the previously affected area again reacted in spite of being covered by skin transplanted from the normal area, and the previously normal area, in spite of being covered by the transplant of the affected skin, remained normal."

In this experiment, then, the hypersensitiveness and immunity could not be proved to be situated either in the epidermis or in the superficial cutis but seemed perhaps to be due to changes in the deeper tissues. "Since the recurrence took place, not at the site of the transplanted area but where the fixed eruption had been, it is probable that the forces governing the sensitization of the transplant originate below the thickness of the graft, perhaps in the neurovascular network supplying the area." Thus Wise<sup>12</sup> states, "It has been demonstrated that the drug acts on the vascular structures of the skin and that the corium is the point of attack."

Phenolphthalein has not been detected in excised portions of skin nor in the contents of a bullous lesion produced by phenolphthalein.<sup>13</sup> I will subsequently report an observation made on one of my cases which leads me to believe that phenolphthalein is present in the skin in the early stage of the eruption. I can find no reference in the literature of a similar observation.

It has been stated that except for the ingestion test no other forms of testing have been evolved which are of value in the diagnosis or improving existing hypersensitiveness to the drug.<sup>10</sup>

As will be noted in the case reports the administration of a small dose of the suspected drug is the best method of determining the causative agent.

#### REPORT OF CASES

**Case 1.** H. R. M., a white man, 52 years of age, consulted me on September 1, 1932 for a generalized erythema multiforme-like eruption of 5 days' duration. He had had a similar eruption in 1924, in 1928, in January 1931 and in November 1931. There were many erythematous, variously sized macules over the trunk, penis and extremities. Bullous lesions were present in the dorsa of the hands and extensor surfaces of the forearms. Erosions were present on the lips. The ankles were erythematous and edematous. The patient's temperature was 99.6°F. Many of these purplish macular lesions were localized around senile keratoses of the back and chest (fig. 1). After much questioning it was elicited that the patient had taken 2 Veroclate tablets at 10 o'clock one evening, that at 11 o'clock edema of his lips occurred, and that in a few hours the eruption became generalized. The patient then recalled that his first attack followed ingestion of a Feenamint in 1924 and that the following attacks always involved the same areas.

Since phenolphthalein is an indicator (e.g., its solution is turned red by alkalis) I performed the following tests 2 weeks after the ingestion of the drug:

1. Patch tests which were negative.
2. Application of a tenth normal and normal solution of potassium hydroxide to scratch marks on the flexor surface of the left forearm, which turned the drop of solution distinctly pink. This phenomenon was observed by Dr. F. J. Eichenlaub. The same reaction was noted on the apparently normal skin of the back.
3. Similar application of 10/N and normal solution



of potassium hydroxide to the areas of fixed eruption which did not show a pink discoloration of the fluid.

After the disappearance of the entire eruption including the fixed areas the above discoloration could not be detected.

The patient was then given a minute dose of phenolphthalein,  $\frac{1}{10}$  grain, in a small quantity of alcohol, and within 15 minutes there was itching of the lips and body, followed by edema of the lower lip and within 2 hours the typical erythema multiforme widespread eruption. The 10/N and normal solution of potassium hydroxide again became pink when applied to scratch marks in the apparently normal skin and did not occur on the fixed eruption.

I have not had an opportunity to repeat these observations. Since the above reactions also occurred after the ingestion of only  $\frac{1}{10}$  grain of phenolphthalein, it will be noted what a minute quantity of the indicator must have been present in this markedly hypersensitive skin if the premise that phenolphthalein was present therein is correct.

**Case 2.** R. E., a white man, aged 52 years, consulted me on November 5, 1932 for a purplish erythematous lesion with central mottling the size of a silver dollar in the left shoulder posteriorly and the right leg (fig. 2). He had the same eruption 2 years previously. He had taken a "cold" capsule which when examined was found to contain phenolphthalein. Later the patient was

in the upper midscapular area, and a smaller lesion was present in the right scapular area. The pigmentation faded but had never entirely disappeared. It had been noticed 2 years previously. The patient took an occasional dose of Agarol and no other drug. At



FIG. 2. Case 2. Fixed eruption on shoulder

10 a. m. he was given  $\frac{1}{2}$  grain of phenolphthalein, and at 11 a. m. there was edema of the lips with deep-seated vesicles and much accentuation of the hue in these fixed lesions. At 4 p. m. 5 additional erythematous areas had occurred on the body and 1 on the chin. All lesions now itched. When last examined in February 1933, there was slight pigmentation of the 2 original fixed areas.

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#### BIBLIOGRAPHY

1. BELOTE, G. H., AND WHITNEY, H. A.: Arch. Dermat. & Syph., 1937, 36, 279.
2. ABRAMOWITZ, E. W.: M. J. & Rec., 1932, 136, 31.
3. STANCANELLI, P.: Dermosifilografio, 1928, 3, 10.
4. WEISS, R. S.: Weekly Bull. St. Louis Med. Soc., 1935, 29, 421.
5. OCHS, B. F.: Discussion of Rosen, I., Arch. Dermat. & Syph., 1932, 26, 948.
6. WEISS, R. S., AND KILE, R. L.: Ibid., 1935, 32, 915.

(Continued on page 284)



FIG. 1. Case 1. Localization of lesions about senile keratoses

given a small dose of the drug which reproduced the fixed lesions.

**Case 3.** T. S., a medical student, aged 24 years, was first examined in May 1932, at which time there were present 2 purplish-red, circumscribed lesions with central mottling; the larger, 4 cm. in diameter, was situated

# GENERAL CONSIDERATIONS AND DIFFERENTIAL DIAGNOSIS OF JAUNDICE DEPICTED BY CRYPTOGRAMS\*

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## 1. WHAT IS JAUNDICE?

Jaundice is the yellow coloration of the tissues and fluids of the body resulting from the accumulation of an excessive amount of bile pigment in the blood (hyperbilirubinemia) with or without other constituents of bile.

## 2. COMPOSITION OF BILE

Main Constituents:

- Bile Pigment
- Bile Salts
- Cholesterol

Other Constituents:

- Water
- Inorganic Salts
- Fatty Acids
- Lecithin and Fat
- Mucin

## 3. LIFE HISTORY OF BILE

a. Bile is secreted continuously by the liver cells.

b. Bile is concentrated and stored in the gall-bladder.

c. Bile is expelled intermittently from the gall-bladder into the common bile duct and the duodenum.

## 4. BILE PIGMENT

Mother Substance: Hemoglobin of senile erythrocytes.

Genesis: Hydrolysis to heme (hematin) and globin within reticulo-endothelial cells of bone marrow, liver, spleen, lymph-nodes and other tissues. Further hydrolysis of heme (hematin) to bilirubin.

Further History: Excreted as part of bile by the liver into the intestines. Reduced in in-

testines by bacteria to form urobilinogen (stercobilinogen). Urobilinogen partly excreted in the stools, being oxidized to urobilin (stercobilin), partly reabsorbed into portal circulation and re-excreted in the bile.

Function: None known.

Amount Normally Present in Blood: 0.1 to 0.5 mg. per 100 c.c.

## 5. BILE SALTS

These are the sodium salts of glycocholic and taurocholic acids. Glycocholic acid is glycocoll (glycine) plus cholic acid. Taurocholic acid is taurin plus cholic acid.

The origin of cholic acid is unknown.

The bile salts circulate as does bile pigment, being reabsorbed from the intestine and re-excreted.

Function: (1) To aid in emulsification of fats in the small intestine; (2) to activate pancreatic lipase; (3) to aid in fat absorption; (4) to keep cholesterol in solution; (5) to aid in absorption of vitamin D.

## 6. CHOLESTEROL

Origin and function little known.

Concentrated 20 to 30 times by the gall-bladder from liver bile.

Amount does not vary with changes in total blood cholesterol nor cholesterol content of diet.

## 7. TYPES OF JAUNDICE

|         |   |                                       |                 |
|---------|---|---------------------------------------|-----------------|
| Hepatic | { | 1. Hemolytic                          | Non-obstructive |
|         |   | 2. Toxic or infective                 |                 |
|         |   | 3. Obstructive                        |                 |
|         |   | 4. Mixed (usually 1 and 2 or 3 and 2) |                 |

## 8. CAUSES OF HEMOLYTIC JAUNDICE

Primary hemolytic icterus  
Icterus neonatorum

\* Read at the Annual Scientific Assembly of the Society, April 26, 1939.

Hemolytic septicemia  
 Malaria  
 Paroxysmal hemoglobinuria  
 Transfusion of wrong blood type  
 Chemical poisons (as sulfanilamide and sulfa-pyridine)  
 Pernicious anemia  
 Sickle-cell anemia  
 Atypical hemolytic anemia

#### 9. CAUSES OF TOXIC OR INFECTIOUS JAUNDICE (HEPATOGENOUS JAUNDICE)

Acute catarrhal jaundice (common)  
 Idiopathic hepatitis (common)  
 Acute yellow atrophy (rare)  
 Poisoning with arsphenamine, phosphorus, cinchopen, etc. (occasional)  
 Secondary syphilis (occasional)  
 Cirrhosis of the liver (jaundice not prominent and usually late)  
 Spirochaetosis icterohaemorrhagica (rare in America)  
 Yellow fever (rare in the United States)  
 Metastatic carcinoma of the liver (jaundice infrequent and late)  
 Congestive heart failure (jaundice rare)

#### 10. CAUSES OF OBSTRUCTIVE JAUNDICE

Stones in the common bile duct  
 Carcinoma of head of pancreas  
 Benign stricture of common bile duct and hepatic ducts  
 Compression of common bile duct by tumor or adhesions  
 Carcinoma of ampulla of Vater  
 Congenital atresia of the bile ducts

#### 11. DATA NECESSARY FOR DIAGNOSIS OF CAUSE OF JAUNDICE

1. A good chronological history (special reference to pain, dyspepsia, systemic disease, exposure to hepatotoxins)
2. Complete physical examination
  - a. Degree and quality of jaundice
  - b. Presence of factitious dermatitis

- c. Size and consistency of the liver and spleen
- d. Evidence of metastases
- e. Enlargement of the gall bladder
- f. Presence or absence of bile in the stools (checked repeatedly, preferably chemically)

3. Repeated observations

4. Use of various tests

5. Surgical exploration in doubtful cases after six weeks

#### 12. TESTS USED IN DIAGNOSIS OF JAUNDICE AND LIVER DISEASE

Five Most Popular Tests:

1. Van den Bergh test
2. Icterus index
3. Galactose tolerance test
4. Bromsulfalein test
5. Hippuric acid test

Other Tests of Some Value:

6. Blood cholesterol and cholesterol esters
7. Rose bengal test
8. Urobilinogen and urobilin in urine
9. Takata-Ara test
10. Serum protein
11. Serum phosphatase
12. Levulose tolerance test
13. Modified glucose tolerance test
14. Tests of various coagulation factors
15. Fragility of erythrocytes
16. Appearance of erythrocytes
17. Elimination of bile salts

#### 13. VAN DEN BERGH REACTION

Use: Determination of type, depth and variability of jaundice. Used repeatedly in all cases of jaundice, both qualitatively and quantitatively.

First step in diagnosis: If reaction is indirect only, jaundice is hemolytic; if direct, it is either hepatogenous or obstructive.

Depth and variability: If deep and constant, jaundice usually means severe acute intra-hepatic disease or carcinoma of head of pan-



creas; if low and variable, it usually means a benign obstructive lesion or chronic form of liver disease.

#### 14. ICTERUS INDEX

Nature: Depth of color of blood serum as compared with standard solution of potassium dichromate.

Use: To determine daily variations of degree of jaundice.

Normal value: 4 to 6.

#### 15. GALACTOSE TOLERANCE TEST

Nature: Ability of liver to assimilate galactose.

Technic: After ingestion of 40 grams, normal person does not lose more than 2.5 to 3 grams of sugar in urine in 5 hours.

Use: To distinguish early cases of intrahepatic jaundice from obstructive jaundice. In the former more than 3 grams is lost in the urine in 5 hours.

#### 16. BROMSULFALEIN TEST

Nature: Ability of liver to excrete 5 mg. of dye per Kg. of body weight by end of 1 hour. Retention indicates liver disease.

Use: To determine disease of liver; of little value if there is much jaundice.

#### 17. HIPPURIC ACID TEST

Nature: Ability of liver to synthesize benzoic acid and aminoacetic acid to form hippuric acid.

Technic: After administration of 6 grams of benzoic acid to fasting patient, about 3 grams of hippuric acid should be eliminated in the urine in 4 hours.

Use: Provided renal function is normal, less than 2.5 grams indicates hepatic disease.

#### 18. CLINICAL FEATURES OF HEMOLYTIC JAUNDICE

1. Indirect Van den Bergh reaction
2. Quantitative Van den Bergh under 5 mg.

3. Absence of pain
4. Absence of itching
5. Acholuria
6. Normally colored stools
7. Increase of urobilin in urine and feces
8. Anemia
9. Splenomegaly and fragile spheroidal erythrocytes in primary type

#### 19. CLINICAL FEATURES OF HEPATOGENOUS JAUNDICE

1. Direct Van den Bergh reaction
2. Quantitative Van den Bergh may reach 25 to 35 mg. in acute cases
3. Relative absence of pain
4. Bile in stools, though reduced
5. Bile in urine
6. Urobilinogen in urine early
7. Galactose tolerance reduced
8. Blood cholesterol reduced
9. History of exposure to hepatotoxins in some cases

#### 20. CLINICAL FEATURES OF OBSTRUCTION OF COMMON BILE DUCT BY STONE

1. Direct Van den Bergh reaction
2. Quantitative Van den Bergh often not over 5 mg.
3. Intermittent pain
4. Jaundice usually slight and variable
5. Fluctuation in color of stools and amount of bile
6. Bile in urine
7. Increasing liver damage as time goes on

#### 21. CLINICAL FEATURES OF CARCINOMA OF HEAD OF PANCREAS

1. Direct Van den Bergh reaction
2. Quantitative Van den Bergh constant, usually between 10 and 20 mg.
3. Deep constant jaundice
4. Absence of pain
5. Complete acholia
6. Choluria

7. In early stages high blood cholesterol and phosphatase and normal galactose tolerance
8. Urobilin and urobilinogen absent from urine
9. May be fatty diarrhea
10. Bloody mucous plugs in duodenal drainage

## 22. ALWAYS REMEMBER THAT:

1. In doubtful cases jaundice should be considered hepatogenous until proved otherwise or until 6 weeks has passed.
2. If in doubt at the end of 6 weeks of expectant and supportive treatment, operate.

## SURGICAL CONSIDERATIONS OF JAUNDICE\*

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As has been pointed out, jaundice may be either hemolytic, toxic or intrahepatic, and obstructive in type. With the exception of the relatively infrequent congenital or familial hemolytic jaundice in which splenectomy is curative, it is the obstructive jaundice which is of surgical interest.

Once the jaundice is diagnosed as obstructive, the patient should receive the benefit of an exploration, since, as Moynihan has so aptly said, "No one living is infallible in the differential diagnosis of obstructive jaundice; the diagnosis is always difficult and the chance of a life saved so important that I advise operation in all cases."

Once an exploration is decided upon, the surgical problem divides itself into four phases: (1) preoperative treatment, (2) optimum time for operation, (3) operative procedure, and (4) postoperative care.

1. *Preoperative treatment.* Regardless of the cause of obstruction the preoperative treatment of jaundice is the same in all cases. The jaundiced patient is a handicapped, poor-risk patient because of three dreaded complications, (1) hemorrhage, (2) hepatic insufficiency, and (3) renal insufficiency.

The tendency to bleed should be determined by coagulation tests. A simple test is that of Grote modified by Boyce. Recent work indicates that the hemorrhagic tendency in obstructive jaundice is associated with a diminution of

prothrombin due to a defective absorption of vitamin K, which results from the absence of bile in the intestines. Others have established that sulphur compounds, which are anticoagulants, are increased in the blood plasma. In line with these investigations therefore, vitamin K and bile or bile salts should be administered. To minimize the production of sulphur compounds protein should be kept at a maintenance minimum in the diet, and complete rest should be ordered to reduce the endogenous metabolism. In the meantime, blood transfusions are still the most effective in combating the bleeding tendency. Some still use calcium salts intravenously on an empiric basis.

There are many functional tests of the liver which can be performed to test hepatic function, but one of the more practical ones is the Quick hippuric acid test which, to be of value, should be done serially. The kidney function should be checked by the phthalein test and by blood urea determinations. Hepatic and renal insufficiency may be overcome by a high carbohydrate diet and the administration of glucose intravenously and a high fluid intake.

2. *Optimum time for operation.* Surgery in the jaundiced patient is not of the emergency variety. One or two weeks delay used in the preparation of the patient will repay the surgeon in a much lessened mortality and a smoother convalescence. The various tests of hepatic and renal functions as well as the blood coagulation determinations will help decide the time for operation, but very important are the serum

\* Read at the Annual Scientific Assembly of the Society, April 26, 1939.

bilirubin studies which should be made frequently. Estimations of the serum bilirubin will indicate whether the bilirubinemia is increasing or diminishing. If the bilirubin in the blood is diminishing, it is obvious that the maximum improvement should be sought; however, if it is increasing, the risk of delay must be weighed against the expected benefits of surgery. Usually it is wise to wait until the bile pigment in the blood reaches a level and if inflammation is present to await its subsidence. Operation in a febrile patient increases markedly the surgical risk.

3. *Operative procedure.* The purpose of the operation is the relief of the obstruction, and the methods used will depend on the cause of such obstruction and the judgment of the surgeon. Few surgical conditions present such technical difficulties or require such surgical skill, ingenuity, or nicety of judgment as does the jaundiced patient.

The choice of anesthetic is of great importance. Local anesthesia is best but disadvantageous because of lack of relaxation which is essential for good biliary tract surgery. It is agreed that chloroform and the barbiturates are very harmful. The gases are less harmful than ether, some preferring cyclopropane. As to spinal anesthesia there seems to be some disagreement. Certainly the relaxation obtained by spinal anesthesia is of advantage, but some believe that it depresses hepatic functions while others deny it.

The mode of operative procedure will depend on the cause of obstruction, which may be stones, a stricture, a neoplasm in or around the larger ducts, or a congenital anomaly.

When the obstruction is due to stones the surgeon may hope for the best results. Various maneuvers and aids to the surgeon are well known to anyone doing biliary tract surgery. The location of the duct may not always be easy, but the use of a needle and syringe to aspirate bile will differentiate the duct from the portal vein. One is fortunate if a stone can be palpated and the duct incised over it. Remov-

ing all the stones is not an easy matter at times, but the use of cautious irrigation of the duct through a catheter and the careful dilatation of the sphincter of Oddi are a few of the methods available. If a stone is impacted in the ampulla of Vater it may have to be removed by a retroduodenal or a more hazardous transduodenal operation. Whether the gall-bladder should be removed or drained will depend on the condition of the patient and the question of the future patency of the ducts, but when feasible the gall-bladder is removed. With but very few exceptions, once the duct is opened it should be drained. The manner of drainage again lies in the discretion of the surgeon. Some use a Mayo-Robson tube but most often a Kehr-Deaver T-tube is used. The removal of this tube may be facilitated by notching it opposite the insertion of the long arm. Dr. Edmund Horgan has advocated the use of an L-tube which is of one piece and has an opening at the angle. The use of the T-tube allows choledochography with opaque media to ascertain the patency of the common duct and the use of ether to fragment any stone that may have been overlooked.

Stricture of the benign or acquired type, although in some cases due to pressure from extrinsic causes and occasionally resulting from a previous cholangitis which had destroyed the elastic layer, in the great majority of cases is due to operative trauma. Whether due to inept surgery, ignorance of pathologic anatomy, or unavoidable accident, the repair of the mischief is one of the most difficult in the whole field of surgery. The reconstructive operations on the duct depend on the site of the stricture and the amount of tissue destruction found. Resection of the stricture and end-to-end anastomosis is the best method but is rarely feasible. Hepaticoduodenostomy, choledochoduodenostomy, or the reconstruction of the duct over a T-tube or a McArthur tube, which acts as a scaffolding, may be used. Occasionally no common duct and only a nubbin of hepatic duct can be found which on nicking



exudes bile. This may be allowed to form a biliary fistula, and months later the fistula may be implanted into the duodenum. At best some of these procedures are not only very difficult and hazardous, but the results may be unsuccessful even after a few years of relief. The obvious answer is the prevention of accidents by meticulous care during the first operation on the biliary tract. I can well remember the chagrin I felt when in one of my own earlier cases I mistook the common duct for the cystic duct in a patient with a very small contracted gall-bladder with a single cholesterol stone. I was fortunate in discovering my error immediately and was able to reconstruct the duct by end-to-end suture over a T-tube with eventual success.

The third cause of obstructive jaundice is that due to neoplasms, usually malignant, either intrinsic or extrinsic. Tumors may occur anywhere in the biliary duct system and tumor of the ampulla is not uncommon. Resection and reconstruction offers the only hope, but cures are rare and the mortality almost forbidding. Of the extrinsic causes carcinoma of the head of the pancreas obstructing that portion of the common duct which traverses it, is most common. Here the main reason for surgery is relief from the almost unbearable pruritus, but a more important reason is the possibility that what was thought to be a malignancy of the pancreas turns out to be an inflammatory lesion or even a stone. The gall-bladder in these cases of carcinoma of the head of the pancreas is usually dilated and is easily anastomosed to the duodenum or stomach. Better is the two-stage operation in which the gall-bladder is drained by means of a Pezzer catheter. This operation takes only a short time and may be done under local anesthesia. The use of the mushroom catheter allows the pressure of the mushroom portion to compress the cut edges against the abdominal wall and prevent hemorrhage. Also it is wise, as pointed out by Crile, to decompress the gall-bladder as one does a urinary bladder in prostatic hypertrophy, by

clamping off the tube intermittently. In about two weeks the tube may be removed and the gall-bladder anastomosed to the duodenum or stomach by a Murphy button or by suture. The button is easy to use and will allow immediate drainage of bile without the interference of edema so common after the suture method. I have had the opportunity of using this method lately in a patient with a carcinoma of the head of the pancreas who was suffering unbearably from pruritus. Although the patient died six weeks after operation from pulmonary embolus, even that short respite from pruritus was worth the trouble.

The fourth cause of obstructive jaundice is the congenital anomaly. A rare congenital anomaly is the congenital cystic dilatation of the common duct. These cysts attain a large size at times and act like aneurysms in causing obstruction by pressure. In the newborn any number of variations may occur in the type of anomaly. There may be absence of a gall-bladder, absence of the hepatic ducts or common duct, or there may be plugging of the common duct with inspissated detritus. When there is a gall-bladder present which is functioning surgery may be life-saving. I have been very fortunate in having such an interesting case recently. This was a 6 weeks' premature infant weighing about 4 pounds 7 ounces when delivered by Dr. Esther Nathanson. The mother was a primipara who had had her spleen removed some fifteen years previously for bleeding due to thrombocytopenic purpura. The third day after birth the infant showed the beginning of jaundice with hemorrhagic tendencies. The blood picture ruled out icterus gravis, the Van den Bergh test showed a direct reaction with 44 mg. of serum bilirubin in 100 c.c. of blood. The mother's Wassermann test was negative. After three weeks during which Dr. Chase and Dr. Greenberg, the pediatricians in charge, worked valiantly to improve the infant's condition by means of blood transfusions, snake venom, and vitamin therapy, the jaundice had deepened, the stools were clay-colored and showed no bile on

tests. Bile salts were given with the feedings in the hope of helping the absorption of any vitamin K which might be present in the formula. In desperation, since it was definitely now an obstructive jaundice, this undernourished infant weighing but 4 pounds 11 ounces was operated on. Under a one-half per cent novocaine infiltration a small upper right rectus incision was made, and fortunately a small gall-bladder the size of a small gooseberry was found. Compression of the bladder failed to empty it. A little ether anesthesia was given and the common duct was looked for but not recognized. Needle aspiration of the gall bladder showed light yellow bile. A very small rubber catheter was then fixed in the fundus with a purse-string suture. Now a stab wound was made in the stomach near the pylorus and another stab wound was made about three centimeters proximal in the stomach. Through this proximal opening a curved hemostat was passed into the stomach and out the distal opening, the tube in the gall-bladder was grasped and the gall-bladder with the tube pulled into the stomach, the edges of which were inverted so that peritoneum of the stomach closely approximated peritoneum over the gall-bladder. A few stitches fixed the stomach to the gall-bladder. The tube was then pulled through the proximal opening of the stomach and cut as short as possible, allowing it to retract into the stomach. The proximal stab wound in the stomach was then closed in two layers. The stomach was fixed with several sutures to the falciform ligament of the liver to prevent distention of the organ and tension on the gall-bladder stitches. The abdomen was then closed as usual and fortified by through-and-through tension sutures of silver wire. In three weeks, after a comparatively smooth convalescence, the tube was passed by rectum and yellow stools gradually appeared. The jaundice lessened and finally disappeared. At 8 months the child weighed 15 $\frac{1}{4}$  lbs. and is continuing to gain. Too much credit cannot be given for the excellent care the

pediatricians gave this infant to make this operation a success. The principle used in this case was not original, but the exact technic of using a counteropening has not been described to my knowledge. Ladd of Boston reported 45 cases of obstructive jaundice in infants in which exploration was done in about half of the cases. He, too, used a tube over which he anastomosed the gall-bladder to the duodenum in 1 case, but the infant did not survive.

4. *Postoperative care.* With proper preoperative care and use of blood transfusions, vitamin K and bile or bile salts and sufficient glucose and fluids, the three main complications of hemorrhage, hepatic and renal insufficiency should be eliminated. The same agents should be used postoperatively. Occasionally obstruction of the T-tube may be present due either to plugging by inspissated bile or mucus or stones. Cholelithography may be used to ascertain the cause, irrigations may be used to dislodge bile plugs, and ether may be used to fragment stones which may have come down. The use of nitrites and other smooth muscle relaxing drugs may be used to facilitate the passage of stones and debris. Oxygen administered immediately after operation reduces the anoxemia, reduces the chances of postoperative pneumonia and lessens the tendency to hemorrhage. A complication that should be mentioned is the occasional reflux of pancreatic and duodenal contents through the drainage tube. Usually the cause is an obstruction at the ampulla which must be dislodged. The loss of upper intestinal fluids leads to rapid emaciation, weakness, dehydration, alkalosis and tetany. These fluids and electrolytes must be replaced and the loss stopped either by removal of the drainage tube or by removal of the obstruction if that is the cause.

In conclusion, may I repeat that surgery on the jaundiced patient is extremely difficult and hazardous. Many of these difficulties may be avoided if the clinician will urge earlier surgical

*(Continued on page 284)*



## PHYSIOLOGY OF DIGESTION\*

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I am going to give you a brief picture of the physiology of digestion as we teach it to the medical student today. In order to use the allotted time most profitably, I shall omit details of digestive enzymes and their action, the nature of the peristaltic movements along the digestive tract and the distribution of the nerve supply, and build upon our common knowledge of these details. In a brief talk such as this, it will be impossible to give both sides of questions not yet fully settled, or to indicate in every instance the degree of certainty that attaches to what is presented.

There are certain body constituents that are continually drained off by excretion or disappear by conversion to other substances. These must be renewed at frequent intervals from chemical compounds and mixtures that we know as food. We do not know all of the substances whose level in the body must be maintained, or whether it is their level in the blood or liver or brain that is important, but we can believe that when the quantity of each substance at its place of importance in the body falls, a signal is given to the organism to eat some of the food that supplies the needed substance. If the animal has access to a variety of foods in abundance, he chooses the food he needs and eats a balanced diet. The experiment has been tried successfully on animals and young children.

If food is not available, the need accumulates for all food substances, and a more insistent signal leads the animal to eat any food presented. This more insistent signal, due to vigorous contractions of the stomach, we recognize as hunger. The contractions may be brought on by the fall of blood sugar after a dose of insulin, and appear to be associated with a diminished sugar metabolism in the brain. It may be that the brain centers controlling the

stomach are stimulated when the brain sugar metabolism diminishes, but there is considerable evidence also for a direct stimulus to the stomach when the blood sugar falls.

When food is available, even before it is actually ingested, the body reacts in an anticipatory manner adapted to the handling of the food. Digestive secretions begin to flow, including saliva, gastric juice and pancreatic juice; the upper end of the tract reacts with a lessening of the hunger contractions, and at the lower end, colonic peristalsis tends to be increased, to clear the path ahead.

On actual ingestion of food, some of these reactions are further emphasized. Hunger contractions cease altogether and the fundus undergoes a "receptive relaxation," in which, nevertheless, it grasps the food with a gentle pressure. The pressure of the wall against the food has been measured as about 12 mm. Hg, one tenth the value of systolic blood pressure. A rise of pressure of as little as 2 mm. above this value is reported to give the sensation of fullness that ends the desire for food. If a harmless drug could be found that induced such gastric hypertension, it would be a boon to those of us who have to watch the waistline.

The distension of the stomach by the ingested food thus tends reflexly to slow or stop the stream of alimentation entering the digestive tube. Indeed, if gastric stimulation by mechanical or chemical means is too great, the stream is not only stopped, but reversed. Emesis occurs. In general, extreme stimulation in any part of the tract is treated as a traffic jam might be. There is reflex slowing or stopping or even reversal of the food stream anterior to the point, and a hastening of activity beyond. Distension of the stomach not only slows the inflow of food, but accelerates pancreatic secretion and increases peristalsis in the ileum and colon, reactions adapted to clearing the path ahead.

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\* Read at the Annual Scientific Assembly of the Society, April 25, 1939.



Gastric evacuation begins in only a few minutes after food enters the stomach. At first, peristaltic activity is confined to the lower end of the stomach, but as digestion proceeds, the waves show their origin more clearly as coming from the gastric pacemaker on the lesser curvature near the cardia. We do not hold the view now that the pylorus opens to the stimulus of acid in the stomach and closes to acid in the duodenum, or that it has high tonus when gastric tone is low and low tone when the gastric tonus is high. The pylorus opens only as it is forced open against its own normal tonus, by a deep enough advancing wave of peristalsis to make impossible backward escape of all of the propelled chyme.

The gastric secretion, already started at sight of desired food, is increased on ingesting the food. Both mechanical and chemical stimulation of the gastric mucosa are involved. Some of the protein is split into the protein fragments known as proteoses and peptones, and these stimulate the stomach to liberate the hormone gastrin, which, with histamine, acts to increase gastric secretion still further. In the stomach this hormonal stimulus acts particularly to increase the acid of the food contents; in the intestine, as we shall see, other hormones will act to reduce this acidity.

As the acid chyme is ejected through the pylorus, the duodenum is confronted with a complex problem. A mixture is entering the duodenum that is acid, and that contains fat, carbohydrate, protein and protein fragments. The acid has served its purpose in initiating protein digestion. It must be neutralized, at any rate partially, or it will interfere with intestinal digestion, particularly with the emulsification of fats. Digestive enzymes should also enter the intestine to handle the fat and carbohydrate, and further to digest the protein. Nonpropulsive movements should occur to stir the reacting solutions; propulsive movements should move the food and residue along. The

evacuation of the stomach should be held in check as needed, to prevent too crowded traffic conditions in the intestine. All these useful reactions occur. If one is deficient to some extent, another can increase to compensate for it. Their mechanisms still occupy the attention of investigators in digestive physiology.

First let us consider the neutralization of acidity, and its effect on the handling of fat. A hormonal stimulus, gastrin, with the aid of histamine, has played a major part in evoking the outpouring of acid. A hormonal stimulus, secretin, possibly with the aid of histamine, now leads to outpouring of alkali from the pancreas, and another, enterogastrone, checks the acid secretion in the stomach and diminishes the gastric motility that would otherwise push this acid too rapidly into the intestine. Both secretin and enterogastrone are liberated from the duodenal mucosa.

The neutralization of acid is not carried to completion, and the problem of fat emulsification must be solved by an additional reaction, the outpouring of bile into the intestine. Bile permits fat emulsification even in acid solution. The liver secretes bile in response to the same hormone, secretin, that has stimulated the flow of alkaline juice from the pancreas. Furthermore, to make doubly sure that sufficient bile is available, the gall bladder is caused to contract by a third duodenal hormone, cholecystokinin, and the concentrated bile that has accumulated since the last meal is expelled into the duodenum. As might be expected, the chief stimulus for all these hormones is the condition they are called upon to handle, the presence of acid and fat in the duodenum.

The effect of food in the intestine to retard gastric evacuation is chiefly in the interest of fat digestion, and fat is therefore the most powerful stimulus for this reaction; but crowding of intestinal traffic is undesirable even in digestion of protein and carbohydrate. Accordingly, these substances, too, when present in the intestine, should delay gastric evacuation, and they

do, though to a much less extent than does fat. Even simple mechanical distension of the intestine or gall bladder, which must be taken as signifying to the organism unreadiness of the intestine to receive more chyme, delays or stops gastric evacuation, and by anorexia or even nausea, stops further taking of food. The gastric inhibitory effects of the chyme in the intestine are both by way of the hormone enterogastrone, and by what are called entero-gastric reflexes.

The hormonal stimuli, gastrin and secretin, appear to be more potent in bringing forth acid and alkali secretion than to produce inflow of enzymes. Nerve stimuli, on the other hand, or, more specifically, vagus nerve stimuli and the chemicals that act at vagus nerve endings, such as acetylcholine, pilocarpine and atropin, have a more marked effect on enzyme secretion as contrasted with the effect on acid or alkali. I should mention here still another hormone that has been reported from the duodenal mucosa, enterocrinin. It is reported to stimulate the flow of intestinal juice. This gives us a hormone for every digestive secretion except saliva.

In preparation for absorption, the chyme is reduced essentially to a solution of more or less neutralized hydrochloric acid containing glucose or some other monosaccharid, amino-acids, glycerine, fatty acids, some undigested protein and possibly undigested fat, mixed with the various secretions. The clinical prevalence of protein sensitiveness forces us to look upon absorption of a minute amount of undigested protein as a normal occurrence if we are not to class a majority of our population as abnormal. There is experimental evidence that is suggestive also of absorption of undigested fat in fine emulsion. If this proves to be true, bile alone is able to prepare fat for absorption. Bile has aided in emulsifying the fat and activates the pancreatic lipase to digest it, but it is even more important in fat absorption. By loose chemical combination with fatty acids,

it makes them water-soluble. If this action is missing, there is no compensation for it and fatty acids remain largely unabsorbed. Bile is also necessary for absorption of materials soluble in fat. This is the rationale, for example, of the administration of bile salts in conjunction with vitamin K.

In the process of absorption at least three other hormones play a part. One more duodenal hormone, villikin, has been described. It is liberated by the stimulus of intestinal acidity, and keeps the intestinal villi in motion. This movement of the villi probably hastens absorption merely by its mechanical effects. There is also evidence that both cortin, supplied by the suprarenal cortex, and thyroxin are factors in the absorption of glucose and possibly of fat. There seems to be a certain basal level of glucose absorption along the small intestine that is independent of cortin and thyroxin, upon which is superimposed a higher rate of absorption in the upper third of the small intestine. This higher rate is attributed to an action of cortin and thyroxin to promote combination of glucose with phosphoric acid in the mucosa of the intestine. This phosphorylation of glucose seems to hasten its absorption. There is evidence for a similar phosphorylation of fatty acids, forming phospholipins, as an aid to the more rapid absorption of fats. Cortin and thyroxin would be expected to play a part here, too.

A remarkable feature of the handling of fat by the digestive tract is the excretion from the body of fat and fatty acids through the mucosa of the large intestine. It was formerly thought that a certain percentage of the ingested fat was lost in the feces by simple failure of absorption, but the new method of labelling molecules by attaching heavy hydrogen to them and examining for this tag later, has shown that the normal fecal fat is not the same as that ingested.

The stream of alimentation flowing along the canal may be said to divide when it reaches the small intestine, where part enters the blood and the rest passes on as residue. Water has



not been fully absorbed from this residue. Its presence seems to stimulate the colon to occasional reverse peristalsis until the residue has been considerably dehydrated. I have mentioned that congestion of traffic at any point along the tube causes effective signal to be given to prevent or diminish further flow into that region and to hasten movement on ahead. Distension of the colon may cause slowing of gastric evacuation, and with less apparent reason, the same effect may result from strong sensory stimulation in other visceral regions.

One feature of digestive function that is characteristic of functioning in general is the excess work capacity of the digestive glands. It

is estimated that 50 per cent of the function of pancreatic secretion can be lost before it is detectable by tests. The same is not strictly true of gastric secretion, but it is well known that cases of achlorhydria may go along in apparently perfect health. There is a large factor of safety also in liver function.

Investigation of the digestive enzymes is very actively in progress in a number of laboratories. New information is coming out regarding the conditions under which they are capable of performing their work, particularly regarding the effect on enzyme activity of various salts and other activators and inhibitors.

ABSTRACT OF PAPER READ BEFORE THE  
SOCIETY, FEBRUARY 15, 1939

"ABDOMINAL DRAINAGE FOR PERITONITIS." W. Wayne Babcock, M.D., F.A.C.S., Professor of Surgery and Clinical Surgery, Temple University School of Medicine, Philadelphia.

In the prevention and management of peritonitis four factors are to be considered: the initial infection, bacterial multiplication and increase of virulence, the diffusion of the infection, and finally, the resistance of the patient.

The first three factors as they may largely be controlled or modified by the surgeon should especially be considered; the fourth, the patient's natural or acquired immunity is problematical and controllable only in narrow and uncertain limits. The value of preoperative vaccination of the peritoneum as by the intraperitoneal injection of a mixture of killed streptococci and colon bacilli, favored in 1928 by Rankin and Bagen, has since been questioned by one of its original proponents. The coli bactragen of Steinberg is being made suspending a strain of bacillus (*Escherichia*) coli, after prolonged exposure to weak formaldehyde, in mucilage of gum tragacanth. In the peritoneum the bactragen causes a marked mobilization of phagocytes in three hours while a sufficiently bacterial multiplication to be overwhelming may require eighteen to twenty-four hours. To be effective it is important that this medium be introduced at the time of the peritoneal contamination or before the peritonitis has gained headway.

It may be questioned whether the antitoxins thus far used for peritonitis have any decided value, at least against the common forms in which the *B. coli*,

*B. pyocyaneus*, streptococci, or staphylococci predominate.

The rather rare pneumococcal peritonitis when due to a type for which there is a protective serum should of course be treated by the antitoxin. The claimed importance of anaerobes, especially *Clostridium welchii*, has been disputed. Ravdin as well as Mileni has found this microorganism present in about one fifth of the cases of peritonitis, and the value of the antitoxin developed either in animals or in the blood of persons who have recovered from peritonitis is doubted. Chemotherapy, as with drugs of the sulfanilamide type, is to be considered for those types of infection against which the chemical is effective, but as these drugs have very toxic properties they should not be used indiscriminately.

Blood transfusions may supply needed complement to the patient with peritonitis and constitute an important supportive measure.

By attention to the three factors first mentioned we believe that the surgeon has a great opportunity to reduce the present mortality from peritonitis. The control of the first factor, the initial infection, is the province of aseptic surgery and has been given much consideration, but the other two factors, the propagation of bacteria within the peritoneum and their diffusion, have not received the attention deserved. The multiplication of bacteria within the peritoneum depends upon a suitable culture medium and with this present a minor and otherwise innocuous bacterial contamination may develop into an overwhelming bacterial growth. Therefore, it is important not only to prevent bacterial contamination but

(Continued on page 284)



## A COMPARISON OF ROENTGEN AND GASTROSCOPIC FINDINGS IN DISEASES OF THE STOMACH\*

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Roentgenology, in the hands of careful observers, gives information concerning gastric physiology and pathology second only to the observations of Beaumont on Alexis St. Martin and the findings of the necroscopist at the autopsy table. It may be said as a broad statement that the roentgenologist can tell everything there is to know about pathologic processes of the stomach except their color, and now, with the coöperation of the gastroscopist this detail is supplied. There are no contraindications to the use of roentgen methods in the diagnosis of gastric disorders. Gastroscopic contraindications are mentioned below.

The roentgenologic approach to gastric disorders (roentgenoscopy and roentgenography) is indirect, an opaque media being used to outline a hollow viscus and cast a shadow on plate, film or screen. This method allows demonstration of the size, shape and position of the stomach, the presence or absence of mobility, motility, filling defects, incisurae, niches, fixations and tender points. The mucosal pattern may be studied by compression technic which includes a rather detailed examination of the gastric rugae and mucosa. The pyloric sphincter can be minutely examined, as can the duodenal cap or bulb.

The roentgen method is extremely valuable but not foolproof. We who use it are fallible, therefore errors should be charged to the examiner and not to the method or machine. Reduced to its simplest terms, any procedure, diagnostic or otherwise, is only as good as the time, effort and intelligence that is put into it. The ownership of equipment does not confer omniscience, nor does a new instrument replace reason, logic, or the use of the five senses.

The gastroscopic approach to gastric disorders may be expected to demonstrate gastric lesions directly and in natural color, finer changes in the gastric mucosa, redness, swelling and edema, chronic gastritis with erosions, atrophic gastritis, the characteristic appearance of the gastric mucosa in pernicious anemia, and occasionally small ulcers which may not be demonstrable roentgenologically. In the differential diagnosis of benign ulcers and carcinoma gastroscopy is helpful, but not positive.

The advent of the flexible gastroscope in 1932 was an event of outstanding importance in gastroenterology. Such an innovation is prone to cause undue enthusiasm, overestimation of possibilities, forgetfulness of limitations and disregard of contraindications. While there are no contraindications to the use of roentgenology, the gastroscope should not be used in the presence of esophageal strictures, varices, diverticula, aortic aneurysms, cardiospasm or acute inflammations in which there is danger of esophageal perforation. Recently bleeding gastric ulcers have also become a contraindication. Perforations of the stomach by overinflation<sup>1</sup> or instrumentation<sup>2</sup> with fatal results are not unknown. Routine gastroscopy, therefore, is not a "must," in view of the danger and the fact that roentgenologic methods are safer and simpler procedures. Roentgen studies of esophagus and stomach should always precede gastroscopy.

The limitations of the gastroscope are the so-called blind spots, or regions of the stomach which cannot be explored. These are (a) the dome of the cardia, (b) the lesser curvature distal to the incisura angularis, (c) a portion of the greater curvature opposite the incisura angularis, (d) the duodenal bulb, a most essential particular in any gastric excursion. The inability of the gastroscope to explore the submucosa and muscularis is a limitation not shared by roent-

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genology. Roentgen and gastroscopic methods of examination should be considered as mutually supplementary and coöperative rather than competitive.

Schindler and Templeton<sup>3</sup> report a series of 800 gastroscopic examinations, most of them in association with roentgen studies. Freeman<sup>4</sup> reports 200 cases in which a total of 325 gastroscopic examinations were made. Benedict<sup>1</sup> reports a series of 400 gastroscopic examinations. Schatzki<sup>5</sup> compares the relative values of roentgen and gastroscopic methods, as does Kirklin.<sup>2</sup> Bank and Renshaw<sup>6</sup> correlate gastric analyses and gastroscopic findings. All are in substantial agreement regarding usefulness and limitations. The unanimity of opinion is worthy of note.

In the normal stomach, differences between gastroscopic and roentgenologic examinations are striking. Prominent, irregular, parallel folds, not corresponding with the rugae, are seen gastroscopically. On distention with air, these folds flatten easily, and there appear from ten to fourteen parallel folds, many of which are irregular, bifurcated and transversed by cross rugae. Rugae are rarely seen in the antrum, but a high-twisted cordlike structure separates the antrum from the body of the stomach. This fold, the musculus sphincter antri, usually cannot be identified roentgenographically. After a single swallow of barium, a variety of roentgenographic patterns may be seen. Not uncommonly there are four to six roughly parallel folds in the body and antrum. After filling the stomach with barium and compressing it ten to fourteen folds appear. In most cases the roentgenogram of the gastric mucosa bears little resemblance to the gastroscopic pattern, and sometimes changes clearly discernible at repeated gastroscopy may be entirely undetectable roentgenologically. Conversely, roentgenologic changes may be invisible gastroscopically. The frequent failure of the gastroscopist to see radiating folds of the sort often seen roentgenologically in gastric ulcer, suggests that these folds are not true rugae but rather wrinklins

caused by changes in the submucosa or muscularis. This may explain why roentgenologists sometimes see thickened folds in atrophic gastritis, a condition often marked by thickening of the submucosa beneath the atrophic mucosa. Therefore, gastroscopy is best suited to study the mucosa, and roentgenology the deeper gastric tissues.

Diagnosis of chronic gastritis depends almost entirely on the gastroscope, which shows superficial granules, nodules, crevices, hemorrhages, ulcerations and mucosal edema. Also, the small hemorrhages, pigment spots and hemorrhagic erosions present in stomachs prone to develop ulcers are quite apparent. These lesions are rarely seen roentgenologically. Although it was believed that differences in fold thickness were diagnostic of inflammatory changes, it is now known that they are not indicative of the mucosal state, and folds seen roentgenologically do not correspond to those seen gastroscopically or in the gross specimen. Chronic hypertrophic gastritis, in a few cases, is characterized roentgenologically by the appearance of small nodular filling defects or thickened infiltrated folds. In most normal stomachs and most cases of pyloric neoplasm, the pylorus is visible gastroscopically, but this is not true in duodenal ulcers or ulcers of the pyloric canal and prepyloric region, because the ulcerative lesions cause adhesions which displace the pylorus.

While roentgenograms may show pyloric obstruction, they do not differentiate between obstructing ulcer or neoplasm. If, however, the lesion is malignant the gastroscopist can see into the pyloric antrum and visualize the lesion directly, whereas if the antrum cannot be looked into, the pylorus is probably displaced by adhesions, a condition suggesting a benign lesion. Ulcers along the lesser curvature of the antrum and occasionally in the body may not be seen by the gastroscopist but are readily visualized roentgenologically, but the healing process of ulcers is best followed through the gastroscope. Benign tumors, 2 cm. or more in

diameter, show well in relief roentgenograms, but small polyps are often missed. This suggests that soft, early carcinomatous tumors may be seen earliest by gastroscopy. This is particularly true when the muscularis is not yet involved and there is no interference with peristalsis. In carcinoma, gastroscopy has two advantages: (1) It is of great value in determining the operability of the lesion, and (2) it permits some expression of opinion regarding differentiation between benign and malignant ulcers, although biopsy is the last word in tissue diagnosis. Gastroscopy is therefore indicated in ulcers occurring in patients over twenty-five. By means of gastroscopy carcinomas can be grouped into four morphologic and clinical types.<sup>3</sup> Type 1 is the broad-based, polypoid, well limited tumor most amenable to resection. Type 2 is a sharply limited ulcerated area, is amenable to resection and produces the meniscus sign in roentgenograms. Type 3 is only partially limited, and therefore only operable when it infiltrates toward the pylorus. Type 4 is a diffuse, infiltrating lesion, which in its earlier stages may be overlooked by either method.

A summation of the observations and opinions to date indicates that gastroscopy only supplements, cannot replace, and is not a substitute for roentgen methods of gastric examination. It should be used primarily as an adjunct to roentgenology. Gastroscopy cannot explore the entire gastric mucosa. This limitation hampers its usefulness. The field of greatest value lies in the study of finer changes in the gastric mucosa, as in superficial, hypertrophic and atrophic gastritis, in the diagnosis of small shallow ulceration, and in the natural colors which the observer beholds.

Roentgenology is the easier and safer method for routine examinations.

All portions of the stomach are demonstrable roentgenologically.

Roentgenologically the entire stomach may be viewed simultaneously, its peristalsis observed, and its walls palpated.

The diagnostic possibilities may be briefly compared as follows: In gastritis gastroscopy is by far the more accurate method of diagnosis. In ulcer roentgenography makes it easier to discover and determine the size, shape and position of large ulcers. The roentgen signs of malignancy are well defined; however, an attempt at diagnosis of a malignant lesion without biopsy is a purely tentative, not a final diagnosis. Gastroscopy is superior to roentgenology in the observation of the final healing process of the mucosa. A recent summary<sup>7</sup> of 44 cases of gastric ulcer shows 33 demonstrated equally well by either method, 7 demonstrated by roentgenography and not by gastroscopy, and 4 visualized by gastroscopy and not by roentgenography.

In gastric tumors roentgenography is a more certain, easier method of diagnosis.

If one were forced to choose between the methods, roentgenology would be preferred, but since no such coercion will be exhibited, the salutary and helpful effects of both methods will remain at our disposal.

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#### BIBLIOGRAPHY

1. BENEDICT, E. B.: Value of Gastroscopy in Diagnosis. *Radiology*, 1937, **29**, 480.
2. KIRKLIN, B. R.: Relative Merits of Gastroscopic and Roentgenologic Examination. *Ibid.*, 1937, **29**, 492.
3. SCHINDLER, R., AND TEMPLETON, F.: Comparison of Gastroscopic and Roentgen Findings. *Ibid.*, 1937, **29**, 472.
4. FREEMAN, E. B.: Gastroscopic Study Compared with Other Methods of Diagnosis in Gastric Lesions. *J. A. M. A.*, 1939, **112**, 217.
5. SCHATZKI, R.: Comparative Value of Gastroscopy and Roentgen Examination of the Stomach. *Radiology*, 1937, **29**, 488.
6. BANK, J., AND RENSHAW, J. F.: Chronic Superficial Gastritis; Correlation of Gastric Analysis and Clinical Study with Gastroscopic Examination. *J. A. M. A.*, 1939, **112**, 214.
7. TEMPLETON, F., AND SCHINDLER, R.: Gastroscopic Studies in Chronic Gastritis and Peptic Ulcer. *Am. J. Roentgenol.*, 1939, **41**, 354.



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### HEALTH LEGISLATION

The 76th Congress closed its session without taking action on S. 1620 (Wagner Health Bill). This was expected as Senator Murray, Chairman of the Senate Subcommittee on Education and Labor, before whom hearings in connection with this Bill were held, had stated that it would be impossible for his Subcommittee to make a thorough analysis of the mass of material which had been presented before Congress adjourned. In consequence, this legislation is being held over until the next session.

Senator Murray, however, submitted a preliminary report (Report No. 1139) to the Senate from the Committee on Education and Labor, which provides interesting and illuminating reading. It is apparent that the Committee is favorable to the Wagner Bill. Its views can best be presented by quoting from the report itself. We have, therefore, selected portions which seemed to us most significant. It is suggested that members desiring to read the entire report make a request for a copy at the Medical Society's Office.

The following are excerpts from the report:

A large mass of evidence which has been presented before this committee shows convincingly that there are great opportunities to improve health conditions in this country, to reduce the toll of pain and suffering, to lessen disease and premature death, and to greatly di-

minish the public and private burdens created by preventable sickness and disability. These opportunities exist notwithstanding the fact that health conditions have been steadily improving.

Our general death rate has been declining; the deaths from tuberculosis, diphtheria, and other diseases have been greatly reduced; infant mortality has been cut to nearly half of what it was about 25 years ago; and other great accomplishments have been achieved.

While all this, and more, redounds to the credit of public and private efforts which have been made to improve the Nation's health, urgent needs still exist and large opportunities are still ahead.

\* \* \* \*

There are various factors which explain why large proportions of the population fail to receive the medical and health services they need. So far as community services are concerned, there is often a lack of understanding or experience as to the benefits to be derived from public health and related services and, perhaps more important, there is lack of financial resources. So far as services for individuals are concerned, there is, among other factors, ignorance as to the benefits of modern medical care, reliance upon unsuitable methods of care, distance from practitioners and facilities, etc. But while these particular factors play a part in the case of services for individuals, we are convinced from the evidence placed before us that the major reason is lack of financial ability on the part of large proportions of the population—as individuals, as groups, or as members of communities—to meet the costs of needed services.

\* \* \* \*

It is well known that the medical profession, the hospitals, and other practitioners and agencies have been accustomed to shoulder a substantial part of the burden of providing medical care without charge to those unable to pay for it. Physicians, hospitals, and others are giving a tremendous volume of service without charge to the indigent and to others unable to pay for medical care, and many charges to those supposedly able to pay are not collected. To some extent, physicians recoup for this free service by charging the well-to-do in proportion to their means, but many physicians, serving a clientele with small or modest incomes, find themselves swamped with calls and demands for free care and many are unable to earn incomes reasonably commensurate with their training, ability, and their own financial needs.

We cannot emphasize too strongly, or say too often, that when we speak of inadequate medical care, of insufficient services received by large numbers of people,

or of the economic problems in paying for care, we are not criticizing the physicians or the hospitals or others who furnish service. They have long been performing humanitarian services deserving the highest praise. It is not the responsibility of doctors or hospitals or related groups that large sectors of the population have limited economic resources. We know well enough how co-operatively and how sympathetically doctors, hospitals, and others contribute, as best they can, toward solving the financial problems of their patients. Both we and the professions are trying to see an existing problem in its proper proportions in order that we and they together can devise a good solution.

When the evidence shows how many millions of people have insufficient means to purchase the care they need, it is referring not to people who have applied for care and been denied it but to people who do not receive, or who receive insufficiently, the care they need.

Voluntary organizations of many kinds, lay and professional, civic, welfare, fraternal, religious, charitable, philanthropic, or educational, have made such large contributions to the health and the welfare of our people, to their medical care and toward a solution of medical economic problems, that it is quite unnecessary to review the subject. Every informed citizen knows of the vital role which such voluntary organizations have played in the development of our professions, our hospitals, and our facilities generally, and of the prominent part they have played in helping to moderate or solve the economic problems created by sickness for millions of people. And every right-thinking citizen will insist that in a health program for the future there shall be adequate provision for the continued vigorous activity of the voluntary organizations.

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The first interest of an enlightened government is the well-being of its citizens, and health is a fundamental element in well-being. We regard it as self-evident that the health of our citizens is of basic concern to the Federal Government. The most important asset of our Nation is the health of our citizens, for upon health and vigor depends their economic capacity to be productive. It follows that the Federal Government should take every proper step to safeguard the health, both mental and physical, of its citizens, and to see to it that there is available to every citizen those health and medical services which are necessary for the prevention and cure of disease, and the promotion of the fullest practical measure of health and well-being.

It is our opinion that the administration and operation of health services should be left to the local communities and to the States, and that the Federal Government should not control or dictate to the local com-

munities or States in the management of these functions. But the Federal Government cannot be indifferent to remediable deficiencies or inadequacies in the provision of services that are necessary to health. It should take steps to aid the States and, through them, the local communities, in the provision of necessary health services to their inhabitants. The primary opportunity for the Federal Government is to give financial and technical aid to the States.

\* \* \* \*

The public hearings have shown that there is broad and substantial support now for Federal legislation to strengthen, extend, and improve the health services of our people. Scarcely a witness raised objection against the objectives of the bill, though representatives of some organizations presented serious criticisms, some of which we shall discuss specifically later.

\* \* \* \*

It may be emphasized that the operation of health or medical care programs under this bill is a State and not a Federal obligation. The bill does not propose to set up a Federal system of medical care; it undertakes only to encourage and aid the States in setting up their own programs. Neither—as seemed to be thought by some witnesses—does the bill set up a Federal system of health insurance or of State medicine or of socialized medicine, nor does it require any State to set up any particular type of medical service. The role of the Federal Government remains—as it is now—to give financial and technical aid to the States.

\* \* \* \*

The appropriation sections of titles V, VI, XII, and XIII of the bill include as being especially among the purposes of the authorization to assist rural areas and areas (or, in title XIII, individuals) suffering from severe economic distress. Some witnesses would go further in this direction; they recommend that the bill be amended so as to limit exclusively to "needy" or to "medically needy" persons the health services financially aided by grants-in-aid contemplated by this bill. It has not always been made clear, however, precisely how one or the other of these groups is to be defined, without limiting the effectiveness of health programs in the States so as to defeat the purpose of the bill to improve the health of the population. We have already reviewed the overwhelming body of evidence submitted at our hearings, showing that medical costs may be burdensome and that medical care is inadequate for tens of millions of our people in income brackets above the level of those who are in receipt of any form of public aid or assistance. Any useful definition of the "medically needy" must recognize that a large proportion of the



entire population may be greatly burdened by sickness costs, and may, at any time, be among the "medically needy" even though otherwise self-supporting. Furthermore, many health problems transcend geographical or economic or social boundaries, and some health services must obviously be made available on a community-wide basis to all families and be paid for from general tax funds.

Other witnesses, representing large groups of the population, have emphasized the inadequate services received by self-supporting families and individuals of small incomes; they have recommended that the bill be amended to require, as a condition for receipt of Federal aid, specific health-insurance programs in the States to meet the needs of self-supporting persons with incomes up to \$3,000 or an even higher limit.

Although we have not completed our study of these conflicting recommendations, the bill would appear to follow a fundamentally sound principle when it leaves to the States the decision as to the population groups to be served by their plans. A sound formula must be a flexible one. This seems to be especially important in view of the diverse conditions existing in the several States and the varying needs to be met. In every title, the bill requires the States to participate in financing the costs of the services and it may, therefore, be safely assumed that the States will reach careful conclusions as to the populations to be served by their plans. The special emphasis on the needs of rural areas and of areas or individuals suffering from severe economic distress is sound. But this provision establishes no exclusive groups to be aided nor does it place any drastic restraint on the States; it only supports the basic principle of leaving wide latitude to the States in utilizing Federal aid for the solution of their health problems.

The Committee concluded its report as follows:

S. 1620 has received wide support from large and representative organizations. Its objectives are non-controversial. Our Government is dedicated to promoting the welfare of the people and the protection and improvement of health and well-being. Making available to all of the people the great life-saving services which modern medicine has to offer is an objective which every right-thinking citizen supports.

The committee is convinced that Federal legislation along the general lines followed by S. 1620, based upon Federal-State coöperative programs, is necessary to strengthen the health services of the Nation and to make provision for the progressive and effective improvement of health conditions in all parts of the country and among all groups of people. The needs are large and an

adequate program to put knowledge and skill more effectively to work will involve considerable expenditures of funds. The program must therefore be worked out with great care. We are confident that such a program can be worked out and that the expenditures will be sound national investments which will bring large returns. The role of the Federal Government should be primarily to give technical and financial aid to the States.

A critical analysis of the present provisions of S. 1620 shows a number of points at which its specific purposes can be more clearly stated and its provisions improved. The committee has not yet reached any conclusions concerning the precise rate at which Federal appropriations should be increased, but the committee is agreed on the general principle that the proportion of Federal assistance should be greater to those States in which there is the greatest need for the services contemplated under the bill. The committee is prepared to augment the provisions of the bill—if additional provisions are needed—to assure that the amount of Federal assistance would in no instance be in excess of clearly demonstrated need.

Some misunderstandings seem to have arisen and criticisms have been expressed concerning parts of the bill. Some witnesses have assumed that it would bring about revolutionary or dangerous changes in medical care. We think these fears are unwarranted, but we will welcome further suggestions as to specific amendments which may safeguard the objectives of the bill. Medical science has reached a commendable status in this country. The bill should encourage the further evolutionary development of medical science, teaching, and practice.

The committee has received the assurances of many lay and professional groups that they will be prepared to furnish further information and suggestions. We expect to consult further with representatives of these groups.

We have not yet had adequate time to make exhaustive study of all of the problems involved in the legislation proposed by S. 1620. The committee will continue its study of S. 1620 so that a definitive report on the proposed legislation can be submitted soon after the beginning of the next session of the Congress.

There will undoubtedly be many changes in this legislation before it is presented to the next Congress. The recent reorganization of Federal agencies will most likely have its influence. Both the United States Public Health Service and the Social Security Board are now under the direction of the newly created Federal Secu-



rity Administration. Recommendations of the various groups, including the medical profession, will also have their effect. Indications are too that in the coming months there will be closer coöperation between the Government and professional groups. This is most encouraging because the success of any national health program will depend to a considerable extent upon its sound development and the wholehearted support of all participants.

### MEDICAL ANTI-TRUST INDICTMENT DISMISSED

The medical profession of the District of Columbia welcomes the opinion of Judge Proctor dismissing the indictment under Section 3 of the Sherman Act, involving the American Medical Association, the Medical Society of the District of Columbia, the Harris County Medical Society, the Washington Academy of Surgery and twenty-one doctors.

The Attorney General of the United States promptly and publicly announced that an immediate appeal would be taken. This was to be expected. However, we find it hard to understand a statement attributed to him in one of these announcements by a local newspaper. He was quoted as saying:

"The serious question raised here of coercion against doctors and hospitals, with the result that experimental work cannot be carried on for the poor and indigent, places upon us an obligation to go ahead without delay."

It is difficult for us to understand this alleged statement because the medical profession has never opposed "experimental work—for the poor and indigent" but has initiated such undertakings in all parts of this country.

Officials of the Department of Justice have made a number of public statements regarding this prosecution. As the final disposition of this novel case involving the profession must be settled by the Courts, we believe it should be allowed to rest there.

Judge Proctor has stated clearly his belief that medicine is not a "trade" under the Sherman Act. Judge Proctor said, "Is medical practice a trade within the meaning of Section 3 of the Sherman Act? In my opinion, it is not." He then goes on to cite the cases supporting his opinion.

In dismissing the indictment, Judge Proctor also held it insufficient "as a pleading," "afflicted with vague and uncertain statements," and in some instances "altogether lacking" in "material facts." "Inference, opinion and conjecture" were freely indulged, said the Court, in this prejudicial "indictment which smacks so much of a highly colored, argumentative discourse."

We believe that Judge Proctor's decision will be upheld by the higher Courts.

### COLLECTION AGENCIES

Complaints have been received at the Medical Society's Office that certain collection agencies in the District of Columbia are resorting to objectionable methods to obtain payment of medical accounts. An investigation is now being made to ascertain if these complaints are justified. In the meantime physicians are cautioned to ascertain the reliability of agencies before turning their accounts over to them.

While it is conceded that where accounts are neglected or there is refusal to pay a just bill physicians are warranted in making efforts to collect them, they are certain to draw criticism upon themselves and the profession if they fail to give proper instructions to collectors. Physicians should, therefore, not only determine the reliability of the agencies with whom they are dealing but they should be specific regarding collection methods to be used.

Instances have been called to the Society's attention in which collectors have resorted to subterfuge, threats and other measures which arouse antagonism. It is not sufficient that agencies collect bills. Equally important is the manner in which it is done. Agencies which are honestly and intelligently operated will re-



tain the good will of the debtor when it is at all possible and will use methods which are above reproach.

The Society's Office will upon request provide members with information available about collection agencies in the District of Columbia.

#### PERTINENT PARAGRAPHS

As the summer season comes to a close the Executive Board and committees of the Society will soon be in full swing. Not that all of them have been inactive during the summer months. In fact, Board meetings have been held regularly and several committees have carried on. During the months of June, July and August the following meetings were held:

|           |                                                     |
|-----------|-----------------------------------------------------|
| June 7    | Committee on Public Policy                          |
| June 9    | Special Meeting of Executive Board                  |
| June 19   | Obstetrical Board                                   |
| June 26   | Executive Board                                     |
| June 26   | Obstetrical Board                                   |
| June 29   | Committee on Automobile Accidents                   |
| July 13   | Subcommittee on Mental Health                       |
| July 19   | Committee on Industrial Medicine                    |
| July 20   | Committee on Automobile Accidents                   |
| July 24   | Obstetrical Board                                   |
| July 24   | Executive Board                                     |
| August 1  | Advisory Committee to Washington Self-Help Exchange |
| August 2  | Committee on Industrial Medicine                    |
| August 21 | Obstetrical Board                                   |
| August 28 | Executive Board                                     |

Following Labor Day, meetings were being scheduled for all committees as rapidly as possible. Several important projects are under consideration and it is expected that they will be consummated before the year is very old.

Elsewhere in the MEDICAL ANNALS will be found a chart showing the organization of the Society for the year 1939-1940. This indicates how the Society, Executive Board and committees will function.

A number of inquiries have been received regarding the progress which is being made by MUTUAL HEALTH SERVICE. We are informed

that shortly after the SERVICE opened its offices on July 1, 1939, it became evident that not a great deal could be accomplished during the summer months. It was decided, however, that important groundwork could be laid and many Government agencies and business institutions were contacted with satisfactory response. Intensive efforts will be made in September to enroll a sufficient number of subscribers to get under way as soon as possible.

An important step has been taken by the Board of Trustees in creating a lay advisory committee. Leading citizens of Washington have been requested to serve. Several have indicated their willingness to do so. Their names are not available at the time this is written.

Offices of the SERVICE were moved from the Medical Society Building to 1710 M Street on September 5, 1939.

There has been an unusually fine response to the request for information to be used as a basis for the classification of physicians according to type of practice. Five hundred and eighty-four had returned their questionnaires on August 30, 1939. It is hoped that all members of the Society will take advantage of this opportunity to register themselves for classification. It is important that they do so for the reason that the classification is to be used for the purpose of giving information to the public.

Nearly all members who returned their questionnaires voiced their opinions in regard to the establishment of a telephone-secretarial bureau. Of the 584 who replied, 335 answered the question, "If established by the Medical Society, and under its control, would you subscribe to a telephone-secretarial bureau, providing subscription fees were satisfactory?," in the affirmative, 200 said they would not be interested and 49 were indefinite. If all of those who have signified their interest sign up for such a bureau it could be operated most successfully.

The Executive Board at its last meeting instructed the Secretary to develop plans for



inaugurating a bureau and if the Board approves them it is contemplated that recommendations will be submitted to the Society at its first business meeting in October.

Although the next Annual Scientific Assembly will not be held until October, 1940, committees are being appointed and will soon become active. Dr. John A. Reed is General Chairman of the Committee on Arrangements. He believes that an early start will assure one of the best Assemblies the Society has held.

Announcement of appointments to Subcommittees of the Committee on Arrangements will be found in this issue of the ANNALS. Meetings will be scheduled in the near future.

Several unique features are being considered in connection with the exhibits, among them being a Doctors' Hobby Exhibit. Many members of the Society have unusual hobbies and it is believed that the Washington profession would make a very fine showing. In addition, it has been suggested that a Public Health Exhibit be sponsored, which would be open to the general public.

Upon the request of the Goodwill Industries of Washington, the Executive Board has approved the establishment of a medical program at that institution similar to the one inaugurated at the Washington Self-Help Exchange. The duties of the present Advisory Committee to the Washington Self-Help Exchange have been broadened to include the Goodwill Industries. Volunteers are to be sought for service at the Industries and a canvass of the membership will have been made before this appears.

A sufficient number of physicians have subscribed to Group Hospitalization, Inc., to meet the requirements laid down by its Board of Directors. It was thought that a greater number would apply. However, it was realized that a good many physicians were out of the city during the months of July and August. It is still possible for these members and others who

desire to do so to subscribe to Group Hospitalization. However, their subscriptions will not become effective until March 1, 1940. Applications can be obtained by calling the Society's Office.

Members who have subscribed are reminded that all checks for dues should be made payable to The Medical Society of the District of Columbia and not to Group Hospitalization, Inc. The Society makes the collections, following which a remittance for the total amount due Group Hospitalization is made.

Recently the idea was advanced that the Society sponsor a Health Day in cooperation with other health groups. This matter will undoubtedly receive consideration of the proper committee in the near future. It would be in many respects, in our opinion, a worthwhile step, reminding the people of the importance of the health services which they receive and further stimulating interest in their maintenance.

The Committee on Automobile Accidents at its meeting on July 20 adopted the following recommendations which were subsequently approved by the Executive Board:

1. That applicants for renewal of drivers' licenses be required to have their eyes re-examined.
2. That the form which is now signed by the ophthalmologist or optometrist, following an eye examination, permitting persons who have qualified for drivers' licenses, to drive "with glasses" or "without glasses" be amended to read "with or without glasses."
3. That laboratory tests now used in some of the larger cities to determine whether or not a driver is intoxicated be approved, providing that they are developed scientifically by qualified persons and used only to prove contributory negligence.
4. That information regarding the service be more widely disseminated by the Committee on Automobile Accidents in cooperation

tion with the Committee on Public Relations.

5. That an educational program in first aid as it relates to automobile accidents be sponsored.
6. That efforts be made to regulate speed of vehicles transporting injured persons to hospitals so as not to endanger the lives of pedestrians.

### HEALTH HIGHLIGHTS OF 1938

The annual report of the District Health Department for the calendar year 1938 has just been submitted to the District Board of Commissioners. The report states:

The year 1938 saw many new steps taken toward the aim of building a health service in the District of Columbia which would rank with the best in the nation. It was gratifying to see significant life saving in return for the investment in health facilities and health services.

For example, the general death rate dropped to its lowest point in history, having declined from a rate of 14.78 deaths per 1000 population in 1934 to 12.92 in 1938. This is a saving of 1.86 lives for each 1000 population. Since the estimated population in the District of Columbia is 627,000, a total of 1166 persons were saved in 1938 who would have died if the rate of 1934 had continued through 1938.

A new all-time low infant mortality rate was established during the year, declining from 66.1 infant deaths per 1000 live births in 1934 to 48.1 in 1938. This last rate was even lower than in the nation as a whole.

Only 7 deaths from diphtheria in 1938 gave the lowest diphtheria mortality rate in Washington's history, having dropped from 3.2 deaths per 100,000 population in 1934 to the new low of 1.1 in 1938.

Pneumonia also had the lowest mortality rate on record, dropping from 132.1 deaths per 100,000 population in 1934 to 87.1 in 1938.

Even tuberculosis mortality reached the lowest point ever recorded in the District, taking a drop to 93.8 deaths per 100,000 population

(including deaths at Glenn Dale Tuberculosis Sanatorium) in 1938 from 123.0 in 1934.

Some selected items showing life saving in the District during the past five years are listed as follows:

LIFE SAVING IN THE DISTRICT OF COLUMBIA

|                                             | 1934  | 1938  | DE-<br>CREASE | PER-<br>CENT-<br>AGE<br>DE-<br>CREASE<br>SINCE<br>1934 |
|---------------------------------------------|-------|-------|---------------|--------------------------------------------------------|
| General death rate per 1000 population..... | 14.78 | 12.92 | 1.86          | 12.6                                                   |
| Infant deaths per 1000 live births.....     | 66.1  | 48.1  | 18.0          | 27.2                                                   |
| Diphtheria deaths per 100,000.....          | 3.2   | 1.1   | 2.1           | 65.6                                                   |
| Pneumonia deaths per 100,000.....           | 132.1 | 87.1  | 45.0          | 34.1                                                   |
| Tuberculosis deaths per 100,000.....        | 123.0 | 93.8  | 29.2          | 23.7                                                   |

Progress in the expansion of preventive services and the increased response of the people in making use of these services is strikingly shown in the following table. The progressive

GROWTH OF PREVENTIVE SERVICES

D. C. Health Department, 1934 and 1938

| SERVICE                                           | 1934              | 1938    |
|---------------------------------------------------|-------------------|---------|
| <i>Preventable Diseases:</i>                      |                   |         |
| No. of immunizations for diphtheria.....          | 4,629             | 13,521  |
| No. of smallpox vaccinations....                  | 4,961             | 6,016   |
| No. of consulting calls to assist physicians..... | 1,115             | 1,088   |
| <i>Venereal Disease Clinic:</i>                   |                   |         |
| New cases.....                                    | 5,459*            | 8,069   |
| Total visits.....                                 | 56,184*           | 142,853 |
| Treatments for syphilis.....                      | 38,185*           | 72,610  |
| Treatments for gonorrhea....                      | 17,257*           | 29,174  |
| Total treatments.....                             | 55,442*           | 101,784 |
| <i>Tuberculosis Clinic:</i>                       |                   |         |
| New cases admitted.....                           | 2,824*            | 5,894   |
| Total visits.....                                 | 13,818*           | 23,168  |
| X-ray pictures taken.....                         | 3,165*            | 8,516   |
| <i>Child Hygiene Service:</i>                     |                   |         |
| New cases registered.....                         | ** (1937: 6,713)  | 8,552   |
| Total visits to medical conference.....           | ** (1937: 40,948) | 50,075  |
| Total visits to nursing conferences.....          | ** (1937: 12,739) | 14,429  |

| SERVICE                                                | 1934              | 1938    |
|--------------------------------------------------------|-------------------|---------|
| <i>Maternity Clinic Service:</i>                       |                   |         |
| New cases registered.....                              | ** (1937: 1,261)  | 3,409   |
| Total visits to medical conferences.....               | ** (1937: 5,185)  | 20,168  |
| <i>Medical Inspection of Schools:</i>                  |                   |         |
| No. of pupils inspected for physical defects.....      | 15,679*           | 42,800  |
| No. of dental inspections.....                         | 25,032*           | 38,221  |
| No. of prophylactic treatments.....                    | 17,219*           | 24,429  |
| No. of dental fillings, extractions, etc.....          | 60,368*           | 87,132  |
| <i>Sanitary Inspection:</i>                            |                   |         |
| Total number of inspections....                        | 97,573*           | 94,194  |
| <i>Food Inspection:</i>                                |                   |         |
| No. of inspections of food-handling establishments.... | 122,125*          | 137,447 |
| No. of dairy farm inspections....                      | 7,303*            | 6,338   |
| <i>Laboratories:</i>                                   |                   |         |
| No. of bacteriologic specimens examined.....           | 32,836*           | 53,823  |
| No. of chemical specimens examined.....                | 15,706*           | 12,983  |
| No. of serologic specimens examined.....               | 26,107*           | 79,437  |
| <i>Nursing Service</i>                                 |                   |         |
| Total number of office and field visits.....           | ** (1937: 70,064) | 90,937  |
| <i>Vital Statistics:</i>                               |                   |         |
| No. of transcripts written.....                        | 6,262*            | 8,473   |
| <i>Public Health Instruction:</i>                      |                   |         |
| No. of health lectures given....                       | **                | 257     |
| Total health lecture attendance.....                   | **                | 17,043  |
| No. of copies of health literature distributed.....    | **                | 87,632  |

\* Fiscal year.

\*\* No record for 1934.

development of an efficient coördination between the preventive services in the clinics and the curative services in the hospitals was an important factor in the success of the health department during the past year. The principle of coördination between prevention and cure, generally recognized by practitioners of curative and preventive medicine, although only

in its second year of application in the District of Columbia, has been established as a sound and effective public health practice.

## CALENDAR FOR COMING MEETINGS

**Monday, October 2:** *Section on Gastroenterology.*

"The Nervous and Mental Signs of Gastrointestinal Disorders," Nolan D. C. Lewis, M.D., Director, New York State Psychiatric Institute and Hospital; Professor of Psychiatry, Columbia University.

**Wednesday, October 4:** Business Meeting.

**Wednesday, October 11:** Davidson Lecture.

**Wednesday, October 18:** To be announced.

**Wednesday, October 25:** The Syphilis Journal Club, under the direction of Dr. William H. Hough, will sponsor program.

**Wednesday, November 1:** Business Meeting.

**Wednesday, November 8:** The Urological Society, under the direction of Dr. William P. Herbst, Jr., will present the following program:

"Surgical Procedures in Urology," James T. Priestley, M.D., F.A.C.S., Mayo Clinic, Rochester, Minn.

**Wednesday, November 15:** The Washington Heart Association, through its program chairman, Dr. Austin Chinn, will present a lecture by Tinsley R. Harrison, M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine, Nashville, Tenn., on the general subject of recent advancements in the study of hypertension and renal disease.

**Friday, November 17:** Joint meeting with the Baltimore City Medical Society at Baltimore.

The District Medical Society has arranged the following program:

"Pathogenesis and Prognosis of Bundle Branch Block," Wallace M. Yater, M.D., F.A.C.P.

"The Care of Intractable Pain," Thomas Bradley, M.D.

## NEWS AND PERSONALS

Drs. Charles B. Campbell, George B. Roth and Fred A. J. Geier were appointed by the Executive Board to serve as delegates from the Society to the United States Pharmacopoeial Convention to be held in Washington on May 14, 1940. Drs. Samuel Benjamin and Paul F. Dickens were appointed alternates.

The 1939 activities of the Advisory Committee to the Washington Self-Help Exchange have been broadened to include service at the Goodwill Industries of Washington, by action of the Executive Board at its meeting, July 24. This committee will henceforth be designated as the Advisory Com-



mittee to the Washington Self-Help Exchange and Goodwill Industries of Washington.

The **Speakers Bureau** has been active throughout the summer. Following the close of the Cancer Control Campaign in April the Bureau continued to receive calls for speakers on the subject of cancer. Dr. David Davis addressed the Dental Assistants' Society on May 18; Dr. H. H. Schoenfeld responded to a call from the Takoma Park Citizens' Association on May 19; and Dr. F. J. Eichenlaub gave a talk to secretaries of the Public Schools on May 23. On August 15 Dr. Elmer Klein addressed the Business and Professional Women of Arlington on the subject, "Psychiatry in the Health Program of the Business Woman."

The **First Health Institute of the Work Projects Administration** closed its six weeks' sessions on September 12, having had an average weekly attendance of 500. The coöperation of The Medical Society of the District of Columbia and the Health Department of the District of Columbia made this Institute possible. The Society's Speakers Bureau furnished five speakers on the Control of Cancer for the opening week, July 31 to August 4.

One week was devoted to each of the following subjects: Tuberculosis, Venereal Disease, "Health of Mothers and Children," "How to Live," and "The Public Health Nurse in the Home." Among the members of the Society who participated in these meetings were Drs. A. Barklie Coulter, T. C. Thompson, Ella Oppenheimer, J. B. Jacobs, Hugh J. Davis, and Melvin Price Isaminger.

So many requests were received from those who were unable to attend the talks on Cancer Control during the first week of the Institute that Dr. Ralph R. Rathbone, in response to a request to the Speakers Bureau, gave a lecture September 8 on that subject.

**Appointments of Chairmen** of Subcommittees to the Committee on Arrangements for the 1940 Assembly, approved by the Executive Board at its meeting on July 24, 1939, were as follows:

*Banquet, Luncheon and Entertainment:* Dr. F. A. Hornaday  
*Scientific Exhibits:* Dr. Russell Fields

*Woman's Auxiliary Liaison:* Dr. Robert M. Bolton  
*Woman Physicians:* Dr. Margaret M. Nicholson  
*Program:* Dr. James A. Lyon  
*Public Meeting:* Dr. William J. Mallory  
*Finance:* Dr. J. Ogle Warfield, Jr.  
*Associates:* Dr. Watson W. Eldridge.

The personnel of two of these Subcommittees are now complete and were approved by the Executive Board. They are as follows:

*Subcommittee on Associates:* Dr. Watson W. Eldridge, *Chairman*; Drs. E. C. Albritton, Edgar A. Bocock, Sara E. Branham, John M. Baber, R. N. Calvert, Elma B. Carr, Hugh S. Cumming, A. R. Dawson, R. H. Detwiler, H. H. Howlett, H. A. Latane, Daniel F. Lynch, W. H. Norton, Benjamin C. Perry, William S. Ritchie, George B. Roth, R. N. Sutton, and Reverend David V. McCauley.

*Subcommittee on Woman Physicians:* Dr. Margaret M. Nicholson, *Chairman*; Drs. Ruth Jackson, Gladys Kain, Ella M. A. Enlows, Elizabeth Chickering.

Society members vacationing in Europe have experienced difficulty in returning to the United States because of the war crisis. **Dr. Roy Lyman Sexton**, who left July 25 for France, Switzerland and Italy, arrived home September 7 on the Holland S. S. Johan von Olden Darnevelt. He was to have returned on the Italian S. S. Conte di Savoia but all sailings were cancelled.

**Dr. and Mrs. Walter Freeman** cabled from Stockholm that their return was indefinite. They had been scheduled to sail on the German liner Deutschland due September 8 but all sailings were cancelled.

**Mrs. W. A. Morgan** returned September 6 on the Manhattan from a visit in Italy. Her return passage on the German S. S. Hansan was cancelled and she had to wait in Paris for the American boat.

**Dr. William Thornwall Davis** will speak on "Treatment of Accommodative Convergent Squint" at the 44th Annual Meeting of the American Academy of Ophthalmology and Otolaryngology, which will be held in Chicago October 8-13. **Lt. Col. J. E. Ash**, curator of the Army Medical Museum, will present a paper on "Sinusitis from the Viewpoint of the General Pathologist."

**Dr. Antoine Schneider** has been appointed by President Lyons to serve on the Committee on Automobile Accidents.

**Dr. John W. Thomas** of St. Elizabeths Hospital was among the 42 assistant surgeons appointed to the Navy with the rank of lieutenant.

**Sister Rodriguez**, formerly superintendent of **Georgetown Hospital**, was transferred recently to St. Joseph's Hospital at Lancaster, Pennsylvania, after having been connected with Georgetown Hospital for nearly 40 years. **Sister Mary Jane** has been named to succeed Sister Rodriguez.

**Dr. Leo B. Norris**, president of the Georgetown University Club of the School of Medicine, headed a group of alumni attending Georgetown Day at the New York World's Fair, September 11. Georgetown Day was designated by the alumni in celebration of the 150th anniversary of the founding of Georgetown University.

#### NATIONAL PRESIDENT TO SPEAK

Mrs. Rollo K. Packard of Chicago, National President of the Woman's Auxiliary to the American Medical Association, will be the guest speaker at the first meeting of the Woman's Auxiliary, Tuesday, October 3, at 11 a.m. in the library at the Medical Society building. Doctors are requested to remind their wives of this meeting to insure a large attendance.

#### INVITATION FROM OBSTETRICAL BOARD

The Obstetrical Board Surveying Maternal Mortality meets regularly on the third Monday\* of each month, 8 to 9 p.m., in the Society's auditorium. Physicians (and only physicians) are welcome to attend these interesting and instructive study sessions.

\* September 1939 meeting fourth Monday.

#### ANNUAL RED CROSS DRIVE

An effort is being made this year to have contributions of the medical profession made through our

own channels. One of our profession will make contact with a number of doctors in his neighborhood or professional building. Doctors are requested to make their contributions through the profession and not to the various solicitors in banks, hospitals and other places.

JOHN W. WARNER, *Chairman,*  
*Doctors Division, Professional Group.*

**Correction:** June 1939 Annals, page 170, "The Treatment of the 'Higher' Types of Pneumonia with Specific Serum." Footnote should read, "Part of this work was done in conjunction with the Pneumonia Control Program of the Health Department of the District of Columbia."

#### BOOKS RECEIVED FOR REVIEW

Acknowledgment is made of the following books which have recently been received for review:

**Chemistry in Relation to Biology and Medicine with Especial Reference to Insulin and Other Hormones.** John Jacob Abel. Pp. 79. Baltimore: Williams & Wilkins Co., 1939.

**Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1938.** Price, cloth, \$1.00. Pp. 120. Chicago: American Medical Association, 1939.

**Canned Food Reference Manual.** Pp. 242. New York: American Can Co., 1939.

**Do You Want to Become a Doctor?** Morris Fishbein, M.D., Editor, Journal of the American Medical Association. Price, cloth, \$1.50. Pp. 176. New York: Frederick A. Stokes Co., 1939.

**Mental Therapy—Studies in Fifty Cases,** 2 vols. Louis S. London, M.D. Price, \$12.50. Pp. 427 and 774. New York: Covici-Friede, 1937.

**New and Nonofficial Remedies, 1939,** containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1939. Price, cloth, \$1.50. Pp. 684. Chicago: American Medical Association, 1939.

**1938 Transactions of the Third International Goiter Conference and the American Association for the Study of Goiter.** Pp. 547. Portland, Oregon: Goiter Publications, 1939.

**Medicolegal Phases of Occupational Diseases.** C. O. Sappington, M.D., Dr. P.H. Pp. 405. Chicago: Industrial Health Book Co., 1939.

**Population, Race and Eugenics.** Morris Siegel, M.D.

Price, \$3.00. Pp. 206. Hamilton, Ontario: Dr. Morris Siegel, 546 Barton St., East, 1939.

*Studies from the School of Medicine, The George Washington University, for 1938-1939.* Fifty-six reprints, cloth bound.

*Treatment in General Practice*, 2 vols. Price, cloth, \$7.50. Pp. 259. Boston: Little, Brown & Co., 1939.

## REPRINTS RECEIVED

The following reprints have recently been received for which due acknowledgment is made:

"Observations from a Study of the Records of One Thousand Mastoid Operations, with Considerations of Meningeal Complications and Treatment." Earle G. Breeding. Transactions, Medical Society of the State of North Carolina, 1938.

"Aminophyllin in Asthma." Grafton Tyler Brown. The Journal of Allergy, November, 1938.

"Constitutional Reactions from Bacterial Vaccines." Grafton Tyler Brown. Annals of Internal Medicine, October, 1938.

"Studies on Oxyuriasis." Eloise B. Cram and Lucy Reardon. The American Journal of Hygiene, January, 1939.

"The Blood and Urine of Dogs Following Paraldehyde." James H. Defendorf. The American Journal of the Medical Sciences, March, 1938.

"A New Bismuth Olive-Oil Preparation." Russell J. Fields. The Urologic and Cutaneous Review, December, 1936.

"The Use of Sulfanilamide Powder Locally in the Treatment of Chancroid." Russell J. Fields and Jacob Joseph Weinstein. The Urologic and Cutaneous Review, December, 1938.

"The Prevention of Cruelty and the Work of a Great Humane Society." Maurice C. Hall. The Scientific Monthly, March, 1932.

"Parasitology in Relation to Public Health." Maurice C. Hall. Virginia Medical Monthly, January, 1935.

"Therapeutics of Worm Diseases." Maurice C. Hall. Proceedings of Twelfth International Veterinary Congress, Vol. III, 1935.

"Gene and Parasite Pathology." Maurice C. Hall. The Journal of Heredity, October, 1935.

"Studies on Oxyuriasis." Maurice C. Hall. The American Journal of Tropical Medicine, May, 1937.

Statement of Dr. Maurice C. Hall, Chief, Division of Zoology, National Institute of Health. From Hearings before the Subcommittee on Public Health, Hospitals, and Charities of the Committee on the District of Columbia, House of Representatives, H. R. 3890 To Prohibit Experiments upon Living Dogs, January, 1938.

"Three Parasites Which Habitually Surmount Our Sanitary Barriers." Maurice C. Hall. Livro Jubilar Prof. Travassos, March, 1938.

"The Relation Between Parasitic Diseases of Man and Animals." Maurice C. Hall. Thirteenth International Veterinary Congress, 1938.

"The Combined Oral and Rectal Administration of Paraldehyde During Labor." Howard F. Kane, George B. Roth, and Theodore E. Mandy. Read before the Delaware Academy of Medicine, Wilmington, March, 1928.

"Combined Paraldehyde-Benzyl Alcohol Pain Relief in Obstetrics." Howard F. Kane, and George B. Roth. Anesthesia and Analgesia, May-June, 1937.

"Idiosyncrasy to Paraldehyde." Jacob Kotz, George B. Roth, and W. A. Ryon. The Journal of the American Medical Association, June, 1938.

"Mortality from Malaria in the United States." John Benjamin Nichols. Virginia Medical Monthly, June, 1939.

"Paralysis of the Inferior Oblique Muscle Following the Caldwell-Luc Operation." Joel N. Novick. Archives of Otolaryngology, September, 1938.

"A Comparison of Paraldehyde, Chloral Hydrate and Sodium Isoamyl Ethyl Barbiturate on the Heart of the Spiny Dogfish." George B. Roth. Bulletin of Mount Desert Island Biological Laboratory, 1937.

"The Effect of Paraldehyde and Benzyl Alcohol on Uterine Activity." George B. Roth and Howard F. Kane. The Journal of Laboratory and Clinical Medicine, February, 1937.

"The Chemistry of Allergens." Joseph R. Spies, Harry S. Bernton, and Henry Stevens. The Journal of Allergy, January, 1939.

"Cystitis Follicularis." W. Calhoun Stirling. The Journal of the American Medical Association, April, 1939.

"Sarcoma of the Prostate." W. Calhoun Stirling. The Journal of Urology, April, 1939.

"Treatment of Psychoneuroses." Tom A. Williams. British Medical Journal, January, 1938.

"Examples of Suicide Prevented by Mental Hygiene." Tom A. Williams.

"Studies on Oxyuriasis." Willard H. Wright, and Eloise B. Cram. American Journal of Diseases of Children, December, 1937.

## Frederick Ogle Roman, M.D.

(1866-1939)

Dr. Frederick Ogle Roman, a Life Member of The Medical Society of the District of Columbia, died August 12, 1939, at his home, 3020 Mount Pleasant Street, N.W., following a week's illness. He had been in poor health for several years.

Dr. Roman was born in Belleville, Illinois, in 1866, and moved to the District at the age of 10. He attended St. John's College and received his medical degree from National University in 1894. He had practiced in the District since that time.

He was elected to Active Membership in the Medical Association of the District of Columbia in 1895 and became a member of the Medical



Society in 1896. He was a member of the American Medical Association and had been affiliated with the Washington Lodge, No. 15, B.P.O.E., since 1907.

Surviving are his wife, Mrs. Katharine S. Roman; a daughter, Mrs. Alvin B. Kiesecker, and his mother, Mrs. Isabell Roman, all of Washington.

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*(Continued from page 257)*

7. NAEGELI, O.: *Klin. Wchnschr.*, 1927, 6, 25, 73.
8. SCHREIBER, A.: *Dermat. Wchnschr.*, 1931, 93, 1642.
9. ABRAMOWITZ, E. W., AND NOUN, M. H.: *Arch. Dermat. & Syph.*, 1937, 35, 875 (correction 1937, 35, 1129).
10. SULZBERGER, M. B., AND WISE, F.: *Ibid.*, 1933, 28, 461.
11. WISE, F., AND SULZBERGER, M. B.: *Ibid.*, 1933, 27, 549.
12. WISE, F.: Discussion of Abramowitz, E. W., *Ibid.*, 1935, 31, 793.
13. ABRAMOWITZ, E. W.: *Ibid.*, 1935, 31, 777.

*(Continued from page 264)*

intervention on those with cholecystic disease and if the surgeon will use meticulous care in performing the operative procedure. Furthermore, once obstructive jaundice has occurred, close coöperation between clinician, laboratory man and surgeon is imperative if the best results are to be obtained.

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also adequately to remove as far as possible any culture medium, as blood, serum, pus, bile and gastrointestinal contents, from the cavity. To this end we have devised aspirating or sump drains for the continuous removal of liquids from the peritoneal cavity. These consist of an inner aspirating tube fixed in an open external perforated tube of required shape. These tubes are placed in dependent peritoneal areas or in

situations where there is or may be leakage or oozing during the operation, and continuous suction is used for several days or until the areas have been walled off by adhesions. The suction is best supplied by an aspirating bottle actuated by a small motor driven pump, although an aspirator attached to the water system or a Wangenstein type of apparatus may be used. Peritonitis is a liquid borne disease, and by keeping the cavity relatively dry by suction or dependent drains, the spread of the infection may be limited. Very important is the material of which the drain is made. Gauze, rubber, catgut, silk and the new plastics incite tissue reaction and plastic adhesion so that the drained area is soon walled from the general peritoneal cavity. We have found, however, that glass drains do not cause this reaction and may drain the general peritoneal cavity for a number of days without the production of plastic exudate or adhesion. Therefore, for continued drainage of the peritoneal cavity only glass drains should be used. We have also introduced large open tubular glass drains to provide an "internal exteriorization" of intra-abdominal areas. Anchored over an unopened septic gall bladder, an appendical or other abscess, the part may be inspected daily and conveniently opened and drained through the tube after adhesions protecting the general peritoneal cavity have formed. The tubes may also be anchored over insecure lines of intestinal suture, where escape of intestinal contents is feared, as well as over necrotic tissue, dangerous to remove early. The use of these new drainage devices has been associated with a marked reduction in our mortality after the more severe operative procedures in the abdomen. With such septic conditions sutures and ligatures of alloy steel wire give security without holding and spreading infection or causing the injurious tissue reactions of catgut and silk.

# MEDICAL ANNALS

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### CARCINOMA OF THE CERVIX\*

JAMES L. SOUTHWORTH, M.D., *Washington*

Carcinoma of the cervix has been chosen for the subject of this paper because of the unique place it holds in the ranks of neoplastic disease. It is one of the most common malignant lesions and at the same time one which lends itself readily to treatment when seen early. Statistics of cures have been favorably influenced even during the past five years, and the progress that has been made during the past thirty years is amazing. The majority of cases, however, still present themselves for treatment when the disease has advanced so far that palliative measures are all that can be offered.

It is, therefore, fitting that we review this important subject and call it again to our minds that we may be ever alert to it. In Emergency Hospital we see comparatively few cases, less than the incidence would lead us to expect, but it is not unlikely that many cases in incipient stages elude us.

The American Society for the Prevention of Cancer has done a great deal in the past few years to educate the public to the fact that to cure cancer it must be seen early. Their activities will fall far short of the goal unless each individual physician who treats female patients

takes it upon himself to insist that these patients, no matter what their original complaint, return at least once a year for examination.

The old axiom should still be adhered to—"Every case of abnormal vaginal bleeding is carcinoma until proven otherwise." In the series of cases at Emergency Hospital, 72 per cent gave bleeding or bloody discharge as the chief complaint. This is borne out by figures from other sources.<sup>1</sup>

#### PATHOLOGY

Cancer of the cervix is of two types—epidermoid carcinoma and adenocarcinoma. Grossly, these two lesions cannot be differentiated, and indeed there is little use to attempt to do so, since the treatment is the same. It is strictly a local disease, and its situation, behaviour, and biologic characteristics all make it susceptible to treatment, perhaps more so than any other form of cancer.

For some reason, a small area of the epithelium of the cervix begins to grow in an abnormal manner. The squamous cells invade the underlying connective tissue; new cancerous cells arise and begin to form an aggregate mass of appreciable dimensions before any symptom is known to the patient.

The rapidity with which the disease progresses

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\* Read at the regular monthly meeting of the House Staff of Emergency Hospital, Washington, D. C.

depends upon two factors, the age of the patient and the inherent malignancy of the tumor. These cells may show varying or mixed grades of anaplastic qualities and mitosis. Upon this basis pathologists class them in four grades. This method is to be distinguished from the clinical groupings which will be described below.<sup>2</sup> From the clinical standpoint, unless one is engaged in research and takes frequent biopsies during the course of the disease, the pathologic grades have little interest. A Grade 1 epidermoid carcinoma in a young woman following a pregnancy may develop into an extensive lesion in the course of six months' time; and conversely, a Grade 3 tumor in a 75-year-old woman may remain, for a year or two, a localized lesion.

Steadily, however, the growth invades and destroys the surrounding tissues. As it increases in size, it is apt to become ulcerated and is sometimes mistaken for a laceration or for cervicitis. With ulceration, a discharge is usually set up consisting of cellular debris, serum, and later of blood. Many of these lesions become secondarily infected and excite a reaction in the normal tissue around them. This accounts many times for the firmness of the nodule when palpated during pelvic examination. This firmness, however, may be due to the tumor itself when it is made up of a denser tissue.

The tumor may invade the vagina and adnexa by contiguity before metastasis occurs through the lymphatics or blood vessels. In a series of 150 cases operated upon in Germany, only 8 per cent showed carcinomatous involvement of the lower lymph-glands, and it must be remembered that this series included advanced as well as early cases. This is another factor which is very favorable in the treatment of the disease by any method.

Of 564 cases in this country in which necropsy was performed and in which no mention of the type of cervical lesion was made, 13 per cent showed metastases to distant organs.<sup>3</sup> In this connection the opinion is held by some observers that radiation therapy has increased the percentage of distant metastasis. The theory is

that the periphery of the tumor received too little radiation. The report of the Memorial Hospital of New York for 1936 recommends that all cases should receive deep therapy through peripheral ports before more direct radiation is used.

Adenocarcinoma forms about 10 per cent of malignant lesions of the cervix, the rest being epidermoid. It arises from the epithelium of the cervical canal and for this reason is prone to be seen by the physician even later than the other group because routine examination may miss it in its earliest stages. In addition it is a more formidable lesion because it gives distant metastases earlier. Examination of material removed at operation in Europe showed distant metastases in 46 per cent of the cases. It is fortunate that this group makes up only 1 in 10 cases seen.

Adenocarcinoma probably accounts for most of the cases of stump cancer seen wherein a large growth is discovered on a cervix within a year after supravaginal hysterectomy. It is most likely in these cases that the lesion exists hidden in the cervical canal, producing discharge and bleeding.<sup>4</sup> Coexisting fibroids most often account for the removal of the uterus, the carcinoma being overlooked. As you know, it is almost routine in this hospital on staff cases that a curettage be done before the abdomen is opened, to rule out such conditions.

The microscopic structure of adenocarcinoma differs from epidermoid carcinoma as the parent tissues differ. The cells show a tendency to arrange themselves in atypical glandular structures. The lesion is apt to be softer to the touch than epidermoid cancer, but it tends to bleed earlier.

The final stages of both epidermoid carcinoma and adenocarcinoma are only too familiar to us all. The washed out, cachectic appearance of the patient and the foul odor which emanates from her remind us that a woman who could have been cured is now, either through her own negligence or through the carelessness of her physician, doomed to a painful death. On



examination of the vagina, one sees a large, fungating, friable mass with indurated tissue extending into all related structures and sometimes with fistulas from rectum or bladder or both. Radiation offers only at best palliative treatment which will extend the life of a patient a few months.

The effect of radiation on cancer cells and the surrounding structures is worth noting. There is considerable inflammatory reaction in the vagina and adnexa for about two weeks after the close of a treatment or a series of treatments. The vagina is reddened and sometimes edematous. Ulcers may appear on the cervix. These are small localized superficial lesions covered with grayish exudate. They heal promptly. After six months the vagina usually is found to be contracted and inelastic; the cervix becomes scarred and inverted. The tumor bed, the adnexa, and the cruciate ligaments, however, are fairly mobile. The uterus does not become fixed. The tumor itself, when of a Group 1 or 2 malignancy, shrinks rapidly and one is not able to demonstrate it by physical examination. The cells themselves become pyknotic or show the formation of multiple nuclei, die, and are absorbed.

Before closing this brief discussion of the pathology, a word should be said about precancerous lesions. For some time the view has been held that a lesion is either benign or malignant, but more recently pathologists have begun to accept the fact that the transition from the benign to the malignant is gradual and the dividing line between the two is not sharp. The term precancerous has come to be applied to conditions which exhibit cell activity unusual in benign lesions but which are not characteristic of neoplasia.<sup>5</sup>

From a clinical standpoint, we are interested in all lesions of the cervix because of the role that chronic irritation is believed to play in the production of cancer. It is interesting to note that in a series of 18,562 patients who had adequate treatment for cervical irritative lesions, only 15 are known to have developed cancer later; while

of 2,555 cases of cervical cancer, only 33 had had adequate treatment for preëxisting cervical lesions.<sup>5</sup>

As to the lesions themselves, cervicitis is the most common. This condition tends to run a chronic course and produce indurated, ulcerated areas and exuberant granulations. Sections of the worst infected cervixes most often show no evidence of malignant activity, yet not a few show atypical cellular changes.

Cervical polyps when sectioned sometimes show circumscribed nests of epithelial cells in the connective tissues and overgrowth of the epithelium of the glands. These do not, however, usually show any anaplastic features in the cells themselves.

For many years there has been some discussion as to the importance of leukoplakia as a precancerous lesion. Leukoplakia itself varies histologically and in some instances does have some of the characteristics of malignancy. The simpler grades show increased keratinization of the outer layers with the basal and intermediate layers of the epithelium normal. At the other extreme there exists, in addition to the increased keratin layer, budding of the basal layers into the connective tissues and increased mitosis with disorientation of the other layers. Pathologists will disagree on the malignancy of some of these. It is the opinion, however, of the gynecological pathologists of Johns Hopkins Hospital<sup>5</sup> that these leukoplakic lesions showing disorientation and budding of the basal layer are the early stages of cancer. So far as the practitioner is concerned, suspicious lesions should be biopsied, and if there is any suspicion of cancer, they should be treated to the fullest extent.

In the series of this hospital, 2 of 60 cases were listed as doubtful on the basis of the histologic specimen. They were treated intensively and neither has shown any sign of cancer in 5 years.

#### SYMPTOMS AND DIAGNOSIS

In describing the clinical aspects of cancer of the cervix, it is well to start with a statement of the findings upon which the clinical groupings

are based. This classification is that accepted by the Radiological Subcommittee of the League of Nations.<sup>6</sup> It should be used as an international standard in order that in the future results of different workers may be compared in a rational manner.

#### Group I

Growth strictly limited to the cervix uteri.  
Uterus movable.

#### Group II

Lesions spreading into one or more fornices with or without infiltration of parametrium adjacent to the uterus, the uterus retaining mobility.

#### Group III

- a. Nodular infiltration of both parametria extending to wall of pelvis with limited mobility of uterus or massive infiltration of one parametrium with fixation of uterus.
- b. More or less superficial infiltration of a large part of vagina with mobile uterus.
- c. Isolated metastases in pelvic glands.
- d. Isolated metastasis in lower part of vagina.

#### Group IV

- a. Massive infiltration of both parametria extending to walls of pelvis.
- b. Carcinoma involving bladder or rectum.
- c. Whole vagina infiltrated. (Rigid vagina.)
- d. Remote metastasis.

Cancer in its early and curable stages is absolutely symptomless and for that reason must be searched for in all cases which are seen for other causes. It is thought now that between yearly periods of examination no cancer can develop to such proportions that it is incurable. There is an exception to this rule. In the puerperium, if cancer is already present or is beginning, it can develop from a small nodule to a Group II or III lesion within six months. It is thought that the softening of the tissues associated with pregnancy affords a more favorable medium for the spread of the growth.

In making routine examinations, many times suspicious or precancerous lesions will be seen. As has been mentioned, the most common of these are cysts, leukoplakia, and cervicitis. These conditions are all related to each other. In the theories of our day, they are predisposing lesions to cancer.

These lesions usually have started with a cervical laceration which has failed to heal. Infection sets in and a cervicitis results. As the infection progresses, eversion of the cervix occurs with a rolling out of the cervical epithelium. The cervical glands may become infected with the formation of cysts. As the condition becomes more chronic, leukoplakic spots may appear.

The patient usually presents herself with a thick discharge of long standing, but has had no abnormal bleeding. On examination the cervix is often everted and ball-shaped. About the internal os may be seen reddened areas. If cysts be present, they present the hard, nodular feel sometimes encountered in cancer. Leukoplakic areas appear as white spots. Any or all of these lesions having been found, the question of possible malignancy arises. Here a nice judgment must be exercised. Most of them are unquestionably benign and no doubt exists. In the indurated, ulcerated erosion or in the cases of leukoplakia, biopsy may be the only solution. In any case of doubt, biopsy should be performed. It is the consensus of opinion that biopsy in no way is dangerous. When specimens are removed for examination, a comparatively large area should be taken and it is well to include some of the surrounding normal cervix for comparison.

It is not necessary to use elaborate or expensive equipment in examining the cervix. Visualization with the speculum in good light is all that is necessary. Having satisfied himself that the lesion is benign, the physician must properly and vigorously treat these lesions if he is to protect his patient. Cauterization, conization, puncturing of cysts, removal of leukoplakic



spots, and the repair of bad lacerations all have their place in cancer prophylaxis.<sup>7</sup>

Vaginal bleeding is the most common symptom of cancer itself. The most common history in the early cases is spotting within twenty-four hours after coitus or douching. From this there are all variations to the other extreme of the anemic and cachectic patient who has been "flooding" intermittently for years. In the series of this hospital, 43 cases, or 72 per cent, had a history of abnormal bleeding. The duration of symptoms ranged from 10 days to 4 years.

In most cases on bimanual examination an induration is felt on one lip of the cervix; a little blood is apt to appear on the glove. In the advanced cases, extension can readily be palpated as extending out into the adjoining structures.

On visualization of the cervix, a white or pale nodule may be seen at the site of the induration. Others have small, ragged, circular, or elongated ulcers. In the advanced cases, a fungating, sloughing, ragged mass may be seen replacing the normal cervix.

In cases of actual epidermoid carcinoma with symptoms and signs, biopsy assumes a less important place than it holds in the symptomless case or in suspicious or precancerous lesions. It is, however, helpful in indicating the prognosis but should not influence the treatment. All cases should be treated to the maximum regardless of the pathologic grade.

In adenocarcinoma one may not be so fortunate as to find the lesion either by palpation or visualization, its presence being indicated only by abnormal bleeding. These cases, when doubt exists, should be dilated and curetted and the scrapings examined. Adenocarcinoma may be hidden entirely within the cervical canal and its presence proven only by histologic examination. Routine dilatation and curettage before subtotal hysterectomy, in any case of "fibrosis uteri" with bleeding, should be done and the scrapings examined grossly. Here, in case of doubt, a frozen section should be made. Failure to do this accounts for the cases of stump carcinoma

which develop within the first six months after operation.

Examination of the cervix in the search for carcinoma should be thorough, but a word of caution should be sounded. Some writers deplore the practice of the use of the tenaculum and weighted speculum in inspection of the cervix. It is contended that these maneuvers favor the spread of the malignancy. As far as can be found, there is no evidence to support or condemn this view. It is unnecessary to use these procedures for diagnosis, however. The bivalve speculum, a forceps, and a pair of tonsil scissors are all that are needed to visualize the lesion clearly and to perform a biopsy if indicated.

#### TREATMENT

The treatment of cancer of the cervix has changed greatly in the past thirty years. Formerly the procedure which offered the greatest hope of cure was the surgical removal of the cancer and the related structures which were considered to have the greatest likelihood of having local metastatic extensions. This included a total hysterectomy with removal of a considerable portion of the endopelvic fascia and the lower lymph-glands. This was a formidable procedure, requiring the highest technical skill to perform at all. It also required long experience to bring about results without a fearful mortality. Dr. Shaw of England, who for years practiced this operation, stated that the primary operative mortality in a surgeon's first 100 cases was 25 per cent. He himself performed over 300 cases and succeeded in lowering this figure to an average of 15 per cent.<sup>8</sup> The average from various sources on this operative mortality is about 20 per cent.

In the surgical treatment, all Group IV cases could not be treated and many Group III lesions were too far advanced for any hope of removal of the metastatic lesions. The reported five-year cures from clinics where operation is practiced is about 35 per cent including all cases. This, until recently, compared favorably with the results obtained by clinics using irradiation



therapy. But, with the exception of a few European centers, surgery is not now used. The reasons are self-evident: (a) the high primary mortality and (b) the higher percentage of cures now being obtained with irradiation. In addition, radiation therapy can help every case, while so many when first seen are beyond the aid of surgical removal. The report published in 1937 from Keil University where both methods are used illustrates these points; 178 cases were operated upon with a primary mortality of 18 per cent, and 36 per cent were cured after 5 years. Irradiation of 124 cases resulted in a primary mortality of 1.2 per cent; 51 per cent were cured after 5 years. This last figure is higher than those usually reported for irradiation therapy, however.<sup>9, 10, 11</sup>

The development of the technic of irradiation has been gradual, and every year sees some new refinement which must be tested over the long five-year-cure road before it can be properly evaluated. Early, those studying radium emanation noted that cancer of the cervix by virtue of its accessibility and the stamina of the surrounding structures was uniquely susceptible to the effects of X-rays. Surgeons and gynecologists soon began to apply irradiation to their inoperable cases. These were gratified to see large cauliflower fungating masses shrink and to note a short improvement in the patients given up for dead. The experiences of Shaw, working in England, graphically illustrate the beginning of radiation therapy.<sup>8</sup>

He and his associates in 1910 were doing the radical hysterectomy with high primary mortality. They secured some brass-screened radium needles and began to irradiate their inoperable cases. The results though palliative were encouraging and they began to use this treatment in their Group I and II cases to see what results could be obtained. Their equipment was inadequate and the technic unstandardized, but in their first series they were able to show a greater per cent of five-year cures than by the operative method. They have now abandoned operation in favor of irradiation.

The problem of radiation therapy is to deliver a lethal dose to the tumor without destruction of the tumor bed and without injury to the body as a whole. Because of the varied susceptibility of the cancerous tissue to irradiation which can be only poorly determined beforehand, all lesions are treated to the limit of tolerance.

Both X-rays and radium emanations are composed of alpha, beta and gamma rays; the effect of these two sources is the same for therapeutic purposes. The alpha and beta rays are cauterizing rays and produce necrosis and sloughing of both malignant and healthy tissues, their effect being about the same as the actual cauter. The gamma rays, when delivered to the lesion, are resisted by the surrounding healthy tissues, while the malignant cells die and are absorbed. In the case of X-rays, gamma-ray irradiation is delivered to the tumor by the combination of high voltage tubes and filters composed of copper, aluminum and tin. Radium is properly screened by platinum or gold. Modern technic is then concerned with the production of gamma radiation as the first principle of treatment. So successful has this been that sloughs which formerly resulted from alpha and beta irradiation are now rare.

The second factor in treatment is the determination of the period of time this gamma irradiation should be spread for the best results. As has been remarked before, the total dosage should be maximal, but daily dosage is still an open problem. Experience of the past has put no limit upon total dosage, because as better screening and better methods of delivery are developed the total climbs, and with it, the percentage of cures.

There are three methods of the use of radiant energy. First, surface radiation, where tubes, packs or plaques of radium are placed against the lesion. During the past eighteen months the development of an intravaginal applicator has made surface irradiation practical by X-rays. The second method is interstitial radiation, needles of radium being inserted into the tumor proper. The third technic is distance radiation

in which the rays are delivered through the body from the outside. Formerly radium plaques were used for this purpose but now the X-ray is used almost exclusively in this method.

The methods most in vogue in this country are surface irradiation by radium combined with distance radiation by X-rays. With regard to the length of time over which the estimated maximal dose is to be given, there are again three technics in the use of radium.

First: High intensity for a short time. According to Healy, the method used at Memorial Hospital in New York City was to start the cases with a high dosage of radium (a total of 6,000 millicurie hours in 10 hours) followed at a later date by external irradiation.<sup>12,8</sup>

Second: Medium intensity and interrupted doses. In Stockholm and England a total dosage of 7,000 milligram hours is given over two 60-hour periods by means of the intrauterine applicator and a small contact application, known as the gold cross.<sup>12</sup>

Third: Regaud Technic, advocated by Regaud of Paris and consisting of the implantation of small amounts of numerous foci in and about the uterus and reaching a dosage of 8,000 milligram hours.<sup>12</sup>

Most workers in this country, however, use plaques of 50 milligrams against the uterus and give a total dosage of 3,000 to 5,000 milligram hours, in two or three sittings at intervals of 1 day to 2 weeks.

All of these technics require X-ray irradiation before or after the application of radium. Since the work of Coutard, all X-ray irradiation is given in small dosages, 200 to 400 R, daily and well filtered, through alternate ports until dosages reaching 10,000 to 15,000 R have been given.<sup>13</sup>

Interstitial radiation with radium is objected to by many workers on the ground that one must invade uninfected tissues through a medium of infection, but to those who have used this technic the objection is more theoretical than real.<sup>12</sup> It has been the experience here that it is very difficult to maintain needles in a position that per-

mits an even distribution of irradiation. The advantages of this method, however, are several. Radium emanation is considered to be effective for a radius of 5 cm. from the focus. By the implantation of a focus or foci within the tumor area the lesion may be more readily affected.<sup>14</sup> This method has been used successfully in many large clinics especially by Pitts and Waterman of Providence.<sup>12</sup>

The question of X-ray versus radium has long been argued. Both are valuable and the one should not be used to the exclusion of the other. Each case must be carefully examined and on the basis of the anatomic distribution of the lesions a plan of attack should be mapped out.

The treatment of Group I lesions can be directed primarily toward the circumscribed lesion itself because there is no extension and metastasis probably has not occurred. A total of 6,000 milligram hours of radium should be given as soon as the lesion is diagnosed. It is the opinion of many that interstitial radiation has here its greatest indication. Others prefer to use plaques or a cross-shaped device with radium extending into the cervical canal. The dosage, however, should be high at the initial treatment, and if the needles or plaques are well screened, there is little danger of too much irradiation with injury to the bladder or rectum. Some elect to repeat the radium treatment within two to four weeks, giving up to 3,000 milligram hours at this sitting.

This amount of radiation is a lethal dose for a Group I lesion. X-ray irradiation should, however, be instituted as soon as the patient's condition permits, and 1,500 R should be given in this case through each of four ports, at the rate of 200 to 400 R per day. With this intensive treatment, one may expect a complete cure in 90 per cent of the cases. Failure may be attributed to faulty diagnosis as to the extent of the lesion, and the failure of the patients to continue treatment.

Group II lesions, provided the metastases are not extensive, can also be treated well with radium first, similar to the routine outlined



above. For Group II lesions and III lesions, with more extensive local metastases, X-rays had best be given first. X-ray affects the periphery of the lesion first and tends to seal any lymphatic extensions. A total of 2,000 to 2,500 R should be given through each of four to six ports; 400 to 500 R daily of well screened deep therapy may be given without serious ill effect.

For the palliative treatment of Group IV lesions, X-ray is the most satisfactory method. These patients are often debilitated, anemic, and cachectic, and for this reason intensive therapy cannot be given. Therefore, 150 to 400 R per day are given alternately through several ports until a maximal dosage is reached or until the patients can no longer withstand the treatment. In those who stand the X-rays well it is advisable to follow it with as much radium as can be borne. There are recorded cures of far-advanced lesions.

Bleeding is sometimes sufficiently severe to require immediate treatment.<sup>15</sup> Radium placed against the cervix will control this symptom within a week, whereas three to four weeks are required with X-rays. A total of 2400 milligram hours usually is sufficient.

The foregoing treatment is an outline similar to that practiced in this country; the technics of application vary from center to center.<sup>16, 17</sup>

During the past eighteen months two advances have been made in irradiation therapy which may prove of definite benefit in the future. The first is the development of 400 KV machines. At present the only advantage this appears to have is that where the 220 KV machine delivers 36 per cent of the surface "r's" to the cervix, the stronger machine delivers 38 per cent. The second development is the intravaginal applicator for irradiation of the cervix directly. This is comparable with a radium plaque with the exception that its sphere of influence extends further into the uterus. The measured R's are delivered 100 per cent to the cervix.

With this intravaginal applicator the treatment used at Emergency Hospital has been modified. Groups I and II cases are given daily 700 R by the intravaginal method until 7,000 R

have been delivered. Following this, external radiation is given through three or four ports at the rate of 250 R per day until 7,500 R have been given. The patient is then allowed to rest for two to four weeks. If at the end of that time the lesion has not completely disappeared, 6,200 milligram hours of radium by means of an intracervical applicator of 50 milligrams and a contact applicator of 50 milligrams are used.

The complications of treatment are several but are not now serious. Nausea, vomiting, and diarrhea occur in many cases when external X-ray is being given. This can be controlled by cutting down the daily dosage and by the administration of Betaxin. (As yet systemic effects have not been observed from the use of the intravaginal X-rays.)

Radium, filtered with brass, as used years ago, sometimes produced disagreeable effects such as rectovaginal fistulas; that is, the cauterizing alpha and beta rays caused necrosis of the tumor masses which was followed by infection and sloughing. With gold or, better, platinum screening these sloughs rarely occur.

Infection of a tumor mass complicates the problem of treatment; it is a well known fact that the tumor does not respond nearly so well to irradiation when this is present. It has been the practice here to apply local antiseptic measures frequently during a course of treatment. Irradiation is not delayed, however, until the infection is completely cleared up.

The results reported by various authors are usually divided into about three periods, beginning with the advent of irradiation therapy in about 1915 up to the present five-year cures which were treated in 1931 or 1932. It is gratifying to note that as better screening and greater dosage have been used, there has been an increase from between 15 and 20 per cent to between 35 and 50 per cent in five-year cures. These figures are for all cases. The figures from Group I lesions have advanced from 70 to 85 per cent.<sup>18, 19</sup>

At Emergency Hospital in the years from 1929 to the present, records have been kept on



all the cases of carcinoma of the cervix. Sixty cases have been treated. The average age of the patients was 48.8 years. The youngest patient was 25, the oldest was 73.

Of these cases, 46 have been followed and accurate records of their progress made. Twenty-one or 45.6 per cent were Group I lesions. Seventeen or 80.8 per cent were well after 1 year; 7 cases or 33 per cent have been followed for 5 or more years and show no evidence of malignancy. There are 2 cases in this group which have been entirely well for 8 years. Three of the Group I cases died from distant metastases within 4 years after treatment was instituted. One of this group, who was given 7,200 milligram hours of radium filtered with brass, developed a rectovaginal fistula. There is some question as to whether this case had extension into the vaginal wall and should have been originally classified as a Group II. She is, however, free from cancer at the present time.

Of the 46 cases adequately followed, 7 or 15.2 per cent were in Group II. Five of these 7 died of the disease within 2 years after the diagnosis was established. No complications from treatment resulted in this group.

Six of the series were in Group III when first seen. None of this group is alive today.

Fifteen of the cases were in Group IV when treatment was instituted. None of this group has survived to the present. Two patients lived for 2 years; 1 lived for 3 years.

#### SUMMARY

Carcinoma of the cervix is a common malignant disease which is amenable to treatment if

seen early. The attention of the profession should be constantly directed to the possibility of this condition being present without symptoms. All cases of abnormal vaginal bleeding should be investigated thoroughly and this diagnosis definitely ruled out. Biopsy should be practiced when doubt exists.

An analysis of the cases treated in the X-ray department of this hospital indicates the difficulties encountered in getting patients to take adequate treatment. It is hoped that the present method of intravaginal X-ray irradiation, which up to the present has exhibited no systemic effects on the patient, will make them more willing to continue treatment.

#### BIBLIOGRAPHY

1. McPEAK, E. M.: *Virginia M. Monthly*, 1931, 57, 733.
2. SCHMITZ, H.: *Radiology*, 1934, 23, 548.
3. FORD, F. A.: *Minnesota Med.*, 1930, 13, 489.
4. SCHEFFEY, L. C.: *J. A. M. A.*, 1936, 107, 837.
5. NOVAK, E.: *Ibid.*, 1937, 108, 1145.
6. DUCUING, J.: *Acta radiol.*, 1938, 19, 13.
7. MILLER, N. F., AND TODD, O. E.: *Surg., Gynec., & Obst.*, 1938, 67, 265.
8. SHAW, W. F.: *Ibid.*, 1937, 64, 332.
9. BOWING, H. H., AND FRICKE, R. E.: *Minnesota Med.*, 1931, 14, 237.
10. FRAZELL, E. L.: *Am. J. Roentgenol.*, 1938, 39, 861.
11. FRICKE, R. E.: *Ibid.*, 1935, 33, 670.
12. PITTS, H. C., AND WATERMAN, G. B.: *Surg., Gynec., & Obst.*, 1937, 64, 30.
13. LUCAS, C. DEF.: *Am. J. Roentgenol.*, 1936, 36, 477.
14. ARNESON, A. N.: *Radiology*, 1938, 30, 167.
15. BOWING, H. H., AND FRICKE, E.: *Am. J. Roentgenol.*, 1936, 36, 490.
16. HEALY, W. P., AND ARNESON, N. A.: *Ibid.*, 1934, 32, 646.
17. KRESS, L. C., AND REINHARD, M. C.: *Radiology*, 1936, 27, 318.
18. BOWING, H. H., AND FRICKE, R. E.: *Ibid.*, 1930, 14, 211.
19. BOWING, H. H., AND FRICKE, R. E.: *Am. J. Roentgenol.*, 1938, 40, 47.

**Reduction of Mortality Rate of Primary Peritonitis.** A reduction of more than 50 per cent in the mortality rate from primary peritonitis (inflammation of the membrane lining the abdominal walls) in infants and children by means of early operation, abdominal drainage and treatment with sulfanilamide or a specific serum is reported by William E. Ladd, M.D., Thomas W. Botsford, M.D., and Edward C. Curnen, M.D., Boston, in *The Journal of the American Medical Association* for October 14, 1939.

Early operation is necessary to determine the organism causing the peritonitis, and then drainage of the abdominal cavity should be instituted. This should be followed immediately by adequate treatment with sulfanilamide if the offending organism is the streptococcus or with type specific serum if the organism is the pneumococcus.

In discussing the death rate from this disease the authors point out: "It has been universally accepted that it has a high mortality rate. However, when the present series of cases is divided into those in which specific treatment was and was not given, there is a striking difference in the rates. In the pneumococcal group with early operation and specific therapy, the rate is only 12.5 per cent, in contrast to 83.3 per cent in those without the advocated treatment. On the other hand the streptococcal group presents a less striking but significant drop in the mortality rate of 72 per cent to 28.5 per cent in the corresponding groups.

"The details of treatment," the authors say, "should remain somewhat elastic. The virulence of the organism and the resistance of the patient are two factors in primary peritonitis which always play an important role."

# HEMOPHILIA IN THE NEGRO

## REPORT OF A CASE

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There is a lack of uniformity of opinion regarding the occurrence of hemophilia in the colored race. In the United States among the twelve million negroes there have been reported only 5 well authenticated instances of hemophilia. Of these, full-bloodedness was claimed by 4 patients.<sup>1,2</sup> The fifth was described as a negro well tintured with white blood.<sup>3</sup> With the present state of the racial trends in this country and the recognized difficulty of determining pure bloodedness, the occurrence of hemophilia in a true full-blooded member of this race has not been satisfactorily demonstrated.

The following case is that of a dark-skinned negro in whom a known source of Caucasian blood was his half-white maternal grandmother.

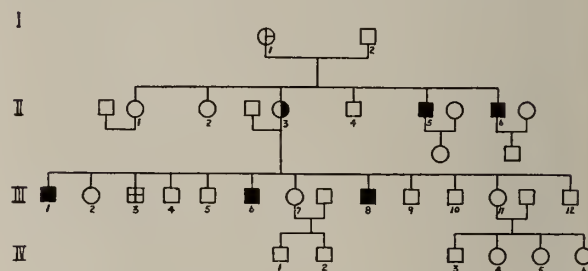
### REPORT OF CASE

M. E., a 20-year-old negro C.C.C. enrollee, was admitted to the Walter Reed General Hospital on October 2, 1938 because of intractable bleeding following extraction of a tooth. The geneologic relationships in 4 generations of this patient's family are summarized in the accompanying chart. There are no bleeders in the father's family. At 7 years of age he cut his feet while running barefoot through a stubble field and bled for 2 days. At 12 years of age his scalp was cut by a stone, with the appearance of a large hematoma in addition to bleeding for several days. His right knee has been swollen and painful on 2 occasions. At 16 years of age he was struck on an upper incisor tooth and was hospitalized 8 days for bleeding. This last attack was stopped by a blood transfusion. Two years prior to the present illness he hit the back of his right hand with a hammer and raised a hematoma about 4 cm. in diameter. He has had numerous attacks of epistaxis.

The present illness began 3 days before admission to this hospital when an upper incisor tooth was extracted followed by profuse and continuous bleeding. The patient was a dark-skinned negro male weighing 165 pounds (fig. 1). He had scars on his head, hands and shins. The bleeding tooth socket showed no evidence of infection. Examination of the heart, lungs, abdomen, nervous system and joints revealed no abnormalities. The

blood pressure was 120/70. The spleen was not palpable. There was a chancre on the penis.

Geneologic Chart of Hemophiliac Negro



I, 1—A half-white negro woman, grandmother of the patient and mother of two bleeders and one female carrier. I, 2—Died in early adulthood of unknown cause. II, 1—Four male and nine female children, no bleeders. II, 2—No bleeders. II, 3—Mother of three bleeders, including the patient. II, 5—Bled to death from scalp wounds. II, 6—Bled to death from wounds caused by automobile accident. III, 1—Bleeds easily. Bruises with hematomata. Almost died from a cut on head. III, 2—Died at birth. III, 3—Died when 2 weeks old, cause unknown. III, 6—Patient. III, 8—Bleeds easily. Almost bled to death from a tooth extraction.

Examination of the blood showed from 3.66 to 4.5 million erythrocytes with from 75 to 80 per cent hemoglobin. The white cells were normal in total number and on differential count. The blood platelets varied from 270,000 to 800,000. The bleeding time was normal. The coagulation time was determined by 2 methods as follows. The first was to determine the time fibrin appeared in a series of drops of blood on a glass slide by drawing a wire through a drop at intervals of 1 minute. The coagulation time by this method on 3 successive days was 13, 11 and 14 minutes. A control was 7 minutes. The second method consisted of determining the coagulation time, the length of time necessary before a  $\frac{1}{2}$  inch test tube could be inverted without spilling the contents. On 3 successive days it was 18, 13 and 14 minutes. Controls were  $8\frac{1}{2}$  and  $5\frac{1}{2}$  minutes by the same method. There was no sickling of the red blood cells. The icterus index was normal. There was no clot retraction in 24 hours and only about  $\frac{1}{4}$  in 48 hours. A fragility test was normal. The blood calcium was 10.5 mg. per cent, the blood phosphorus 4.8 mg. per cent, and the blood phosphatase 5.1 units (Bodansky). The total

protein of the blood was 8.25 Gm. per cent, with 5.17 Gm. per cent of albumin and 3.09 Gm. per cent of globulin.

The patient was treated for 30 days with local measures consisting of the local application of epinephrine, ephedrine and "bipp" packs, and sewing the gum margins over the socket. A dark field examination of the contents of the chancre revealed *Treponema pallida*, and antisyphilitic treatment was promptly started. After 30 days of persistent bleeding he was given a 500 c.c. blood transfusion. Twenty-four hours later a clot



FIG. 1. Hemophiliac negro

had formed in the socket for the first time, and on the second day after the transfusion the bleeding stopped and the wound healed. He had no other attacks of bleeding while in the hospital except one of epistaxis lasting half a day.

#### COMMENT

Hemophilia presents the same characteristics in the negro as it does in the Caucasian race. It is transmitted by sex-linked inheritance through the unaffected female to become mani-

fested in the male. In addition to a history of repeated episodes of bleeding, the affected individuals present a delayed coagulation time and a normal bleeding time.<sup>4</sup> My patient bled continuously for 30 days from a tooth socket. The bleeding stopped within 48 hours after a blood transfusion.

In this group of 6 cases including the one herein reported, transfusions brought about prompt cessation of bleeding in 3 patients.<sup>1, 2</sup> In a fourth the coagulation time was diminished, but he eventually succumbed to an infection in a large hematoma of the thigh.<sup>3</sup> Theelin reduced the coagulation time in 1 patient.<sup>2</sup> In 2 patients<sup>1, 2</sup> roentgenograms showed widening and deepening of the intercondylar fossae of the knee joints.<sup>5</sup>

In 1923 Rosenbloom<sup>6</sup> reported sudden death from the administration of arsphenamine to a negro patient supposed to have hemophilia. His diagnosis is open to question because the report contains no information relative to the patient's history, physical findings or laboratory data. Death in this instance was most likely due to an anaphylactoid reaction to the arsphenamine. Neoarsphenamine was administered to my patient with no untoward effects.

#### SUMMARY

1. A case of hemophilia in a 20-year-old dark-skinned negro is reported in whom a known source of white blood was a half-white grandmother.

2. Among 34 descendants of the half-white negro grandmother of the patient, there occurred 5 instances of hemophilia, 1 known female carrier and 1 infant who died at 2 weeks of age from an unknown cause.

3. Bleeding from a tooth socket for 30 days in this patient was promptly stopped by a blood transfusion.

#### BIBLIOGRAPHY

1. CRANDALL, N. F.: Hemophilia in Negro. *Am. J. M. Sc.*, 1936, 192, 745.

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## DIABETIC SURGERY AT THE GARFIELD MEMORIAL HOSPITAL FROM JULY 1, 1936 TO DECEMBER 31, 1938\*

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McKittrick<sup>1</sup> has stated that "between 4 and 5 per cent of the diabetic patients who enter the New England Deaconess Hospital do so because of gangrene or infection of a lower extremity. About one half of these patients remain 3 weeks and heal without operation. Of the others about 90 per cent will survive some type of amputation with an average stay of 45 days. The patient entering the New England Deaconess Hospital with gangrene and diabetes may be described as a man or woman 64.4 years of age with diabetes of 8.6 years' duration. If a major amputation becomes necessary he or she faces a mortality of about 14 per cent. If successful he has 1 chance in 5 to return to the hospital within 2 years for amputation of the other leg, and an even chance to be dead in 3 years."

The purpose of this study is to review the surgery performed on diabetic patients at the Garfield Memorial Hospital during the 2.5-year period of July 1, 1936 to December 31, 1938, inclusive. During this time there were 48 operations performed on 34 patients, 25 being white and 9 colored. There were 12 males and 22 females, their ages ranging from 15 to 77 years (table 1).

TABLE 1  
*Summary of diabetic surgery*  
*2.5 year period (July 1, 1936-December 31, 1938)*

|                                 |       |
|---------------------------------|-------|
| Total number of patients.....   | 34    |
| Sex:                            |       |
| Males.....                      | 12    |
| Females.....                    | 22    |
| Color:                          |       |
| White.....                      | 25    |
| Colored.....                    | 9     |
| Total number of operations..... | 48    |
| Total number of deaths.....     | 5     |
| Mortality per cent.....         | 10.41 |

\* Presented at the Staff Conference of the Hospital, May 17, 1939.

In a previous report,<sup>2</sup> the authors reviewed diabetic surgery at the Garfield Memorial Hospital for the 12.5-year period of January 1, 1924 to June 30, 1936. Then, as now, gangrene or infection of a lower extremity accounted for a large proportion of the surgical procedures. During the period of time now under discussion, one third of the operations performed were for this purpose.

TABLE 2

| YEARS                           | NO. OF OPERATIONS | NUMBER OF DEATHS | MORTALITY       |
|---------------------------------|-------------------|------------------|-----------------|
|                                 |                   |                  | <i>per cent</i> |
| Jan. 1, 1924-June 30, 1936..... | 85                | 13               | 15.29           |
| July 1, 1936-Dec. 31, 1938..... | 48                | 5                | 10.41           |
| Amputations (major and minor):  |                   |                  |                 |
| Jan. 1, 1924-June 30, 1936..... | 36                | 6                | 16.66           |
| July 1, 1936-Dec. 31, 1938..... | 16                | 3                | 18.75           |
| All other operations:           |                   |                  |                 |
| Jan. 1, 1924-June 30, 1936..... | 49                | 7                | 12.24           |
| July 1, 1936-Dec. 31, 1938..... | 32                | 2                | 6.25            |

From table 2 it will likewise be seen that again a large percentage of the deaths followed this type of operation. There were 16 amputations, 8 major and 8 minor, with 3 deaths, all of which were in the major group, a mortality of 18.75 per cent. Of the remaining 32 operations there were 2 deaths, a mortality percentage of 6.25. This indicates that a diabetic patient who undergoes the removal of a portion of an extremity because of infection or gangrene runs three times the risk of a fatal outcome compared to the diabetic who undergoes surgery of other types.

In view of the fact that such a large proportion of the operations performed on diabetic patients are amputations for gangrene or infection, we have attempted to analyze these cases with a

view toward discovering the cause of death in such patients.

First, we must differentiate between the patient with infection of a toe who has good circulation in the extremity as evidenced by palpable dorsalis pedis and posterior tibialis arteries, whose foot is warm and of a good color, and the patient who may present gangrene of a toe in a pulseless foot which is cold and painful. In the former, conservative measures are often successful. In addition to the usual routine treatment this includes such procedures as positive-negative pressure. If, after a reasonable trial with such measures, no improvement is noted, we must consider that necrosis of bone and osteomyelitis will probably develop and make amputation imperative. In such cases, we believe that amputation of the toe alone is very often sufficient, the good blood supply to the foot insuring proper healing.

However, in the foot with a poor circulation, reliance upon conservative treatment is often responsible for unsatisfactory or even fatal results. If operation in these cases is delayed too long, toxemia of sufficient degree to make surgery extremely dangerous may develop. This toxemia, as evidenced by a septic type of temperature, rapid pulse rate and increasing insulin requirements, existing after the institution of conservative treatment, should be recognized as proof that such measures are insufficient and that immediate surgery should be resorted to. If, on the other hand, the patient should show a gradual improvement with healing of the gangrenous area, we must remember that many of these patients, as soon as they are on their feet, may have a recurrence of the trouble, necessitating further hospitalization and very probably amputation.

Assuming that early surgery is decided upon, the question of the level of amputation is raised. If an attempt to save the leg by removal of the toe alone is made, non-healing of the stump due to a poor blood supply often ensues, with no alleviation of the toxemia, making the patient a

poor risk for the higher amputation which must follow. Likewise, attempts at amputation below the knee are fraught with the same danger.

TABLE 3  
*Classification of surgical processes*

| SURGICAL DIAGNOSIS                                          | NUM-<br>BER OF<br>CASES | NUM-<br>BER OF<br>DEATHS | MORTAL-<br>ITY<br><br>per cent |
|-------------------------------------------------------------|-------------------------|--------------------------|--------------------------------|
| Gangrene and Infection                                      |                         |                          |                                |
| Amputation of thigh.....                                    | 8                       | 3                        | 37.50                          |
| Amputation of toe.....                                      | 8                       | 0                        | 0.00                           |
| Abdominal Operations                                        |                         |                          |                                |
| Appendectomy.....                                           | 3                       | 0                        | 0.00                           |
| Cecosigmoidectomy and appen-<br>dectomy.....                | 1                       | 0                        | 0.00                           |
| Diverticulitis with perforation.....                        | 1                       | 0                        | 0.00                           |
| Hysterectomy.....                                           | 3                       | 1                        | 33.33                          |
| Bilateral salpingo-oöphorectomy<br>(ectopic pregnancy)..... | 1                       | 0                        | 0.00                           |
| Resection of carcinoma of colon.....                        | 1                       | 0                        | 0.00                           |
| Herniorrhaphy.....                                          | 2                       | 0                        | 0.00                           |
| Exploratory laparotomy.....                                 | 2                       | 1                        | 50.00                          |
| Genito-Urinary Operations                                   |                         |                          |                                |
| Suprapubic cystostomy.....                                  | 3                       | 0                        | 0.00                           |
| Suprapubic prostatectomy.....                               | 2                       | 0                        | 0.00                           |
| Electric resection of prostate.....                         | 1                       | 0                        | 0.00                           |
| Infections                                                  |                         |                          |                                |
| Incision and drainage of abscess....                        | 3                       | 0                        | 0.00                           |
| Excision of carbuncle.....                                  | 2                       | 0                        | 0.00                           |
| Incision and drainage of parotid<br>gland.....              | 1                       | 0                        | 0.00                           |
| Rectal Operations                                           |                         |                          |                                |
| Hemorrhoidectomy.....                                       | 1                       | 0                        | 0.00                           |
| Fistula in ano.....                                         | 1                       | 0                        | 0.00                           |
| Orthopedic Operations                                       |                         |                          |                                |
| Curettage of osteomyelitis of bone...                       | 1                       | 0                        | 0.00                           |
| Open reduction of fractured hu-<br>merus.....               | 1                       | 0                        | 0.00                           |
| Ear, Nose and Throat Operations                             |                         |                          |                                |
| Mastoidectomy.....                                          | 1                       | 0                        | 0.00                           |
| Tonsillectomy.....                                          | 1                       | 0                        | 0.00                           |

It is our belief that a mid-thigh amputation gives the best results in these cases. In a number of instances in which such an operation was performed at night because it was felt that its postponement to the following day would greatly

increase the hazard to the patient, there followed a normal temperature and pulse rate, a reduction in insulin requirements with definite subjective improvement.

In table 3 we have indicated the various types of operation performed upon diabetic patients during this period. In most cases the number of operations is too small to draw any definite conclusions. In the cases of the 3 deaths following thigh amputations, septicemia was present in 2, and in the third coronary occlusion occurred just prior to operation and death was impending whether operation was performed or not. In the case of the death following hysterectomy, the patient had made a rapid and uneventful recovery and was walking about the ward when pulmonary embolism occurred with death ensuing within a few minutes. The death following an exploratory laparotomy occurred in a patient in whom carcinoma of the pancreas with metastasis to the liver was discovered. One week after operation he was transferred at his own request to another hospital where death occurred the following day.

In table 4 we have presented the relationship of vascular complications to the duration of diabetes. Of the 11 cases of known duration, 2 were of less than 5 years' duration, 4 were of 5 to 10 years' duration, and 5 were of more than 10 years' duration. The average was 10.6 years. The shortest duration of diabetes as regards this type of complication was 1 month. This occurred in the case of a 70-year-old white male. The longest duration was 21 years in a 67-year-old white female. Of the 12 cases, 3 were in the sixth decade of life, 5 were in the seventh and 4 were in the eighth decade.

In the majority of cases gas anesthesia was used. This has consisted of either ethylene or cyclopropane and oxygen. Thirty operations were performed with this type of anesthesia, 10 with spinal, and 2 under local. In the remaining 6 operations combinations of nitrous oxide and oxygen or nitrous oxide, oxygen and ether were used. It was formerly our belief that spinal anesthesia was the anesthetic of

choice in amputation of gangrenous legs or toes. In view of the fact that diabetic patients with vascular damage of the extremities likewise show disease of the coronary arteries, as evidenced by the electrocardiogram and necropsy findings, we have come to feel that spinal anesthesia involves a definite and unnecessary risk in this group, because of the danger of marked lowering of blood pressure. We have therefore,

TABLE 4  
*Relation of vascular complications to the duration of diabetes*

|                                                           |                     |
|-----------------------------------------------------------|---------------------|
| Total Number of Cases.....                                | 16                  |
| <i>No. of Cases</i>                                       |                     |
| <i>Duration of Years:</i>                                 |                     |
| Less than 1 year.....                                     | 1                   |
| 2 years.....                                              | 1                   |
| 5 years.....                                              | 2                   |
| 6 years.....                                              | 2                   |
| 12 years.....                                             | 1                   |
| 13 years.....                                             | 1                   |
| 15 years.....                                             | 1                   |
| 20 years.....                                             | 1                   |
| 21 years.....                                             | 1                   |
| Unknown.....                                              | 5                   |
| <i>Summary:</i>                                           |                     |
| Duration less than 5 years.....                           | 2 cases             |
| Duration 5 to 10 years.....                               | 4 cases             |
| Duration more than 10 years.....                          | 5 cases             |
| Average duration.....                                     | 10.6 years          |
| <i>Age of Patients at Onset of Vascular Complications</i> |                     |
| <i>Age Group</i>                                          | <i>No. of Cases</i> |
| 50-60                                                     | 3                   |
| 60-70                                                     | 5                   |
| 70-80                                                     | 4                   |

during the past 18 months, advocated the use of gas rather than spinal anesthesia.

The past two and one-half years has seen the introduction of protamine zinc insulin into the treatment of diabetes. It was used in 24 (50 per cent) of the cases in which operations were performed. Its prolonged action assures the patient a continuously acting insulin during the course of the operation, and tends to avoid the hyperglycemia noted after a prolonged operation with gas anesthesia. If the operation is to be done in the early morning it is the prac-



tice to reduce the dose of protamine insulin 20 or 30 per cent the day before and to give 20 or 30 grams of carbohydrate in liquid form at midnight. A blood sugar estimation made one hour before operation will indicate the need for additional carbohydrate or unmodified insulin prior to the administration of the anesthetic. Should the operation not be scheduled until the afternoon, the usual dose of protamine zinc insulin is given the day prior to operation and the following day the dose of protamine zinc insulin is moderately reduced, a more concentrated breakfast containing the same amount of carbohydrate as usual being given. Unmodified insulin in conjunction with carbohydrate by vein, subcutaneously and by mouth is given as indicated. To those not familiar with the use of protamine zinc insulin, it is recommended that unmodified insulin alone be used.

There are several matters whose importance seems sufficient to be mentioned. Transfusion is of unquestionable value in combating the toxemia encountered with gangrene and infection of the extremities both before and after operation, and in supporting the patient from the shock not infrequently met with. An adequate intake of fluid by vein, subcutaneously and by mouth is equally essential. Likewise the restoration and maintenance of the chloride balance usually disturbed by profuse sweating must be carried out by giving sodium chloride by any route.

In the treatment of the surgical diabetic the closest coöperation between the internist and the surgeon is necessary if a satisfactory outcome is to be expected. Surgical skill, while of great importance, must be combined with an intimate knowledge of and experience with the diabetic patient. The surgeon and medical man must see the patient together before and after the operation and should determine by consultation when and what surgical procedure should be attempted, and the kind of anesthetic to be used. A close relationship between those entrusted with the patient's care is probably of greater importance than the

skill of the operator. We feel that any further reduction in the mortality percentage in the diabetic surgery at the Garfield Memorial Hospital will come when this ideal situation is more nearly approached. It is suggested that for the best care of the patient, a small group of internists and surgeons be assigned for the medical and surgical care of the diabetic.

As an example of the good results that may be obtained in diabetic surgery in a general hospital by the close coöperation of surgeon and internist, we quote the statistics on diabetic surgery at the Springfield Hospital, Springfield, Massachusetts, for the two years of 1936 and 1937, as given by Rabinovitz and Weisman.<sup>3</sup> They report 4 deaths in 80 operations, a mortality of 5 per cent. Included in these 80 operations were 16 amputations of a toe or leg with but 1 death, or 0.62 per cent.

#### SUMMARY

Because of its increasing safety, surgical aid is being given to the diabetic patient with greater frequency. Forty-eight operations were performed during the 2.5-year period from July 1, 1936 to December 31, 1938, with a mortality of 10.41 per cent, compared with a mortality of 15.29 per cent in 85 operations performed in the preceding 12.5-year period.

Major and minor operations on infected and gangrenous extremities continue to account for most of the operative deaths. In other types of surgery on the diabetic the mortality percentage was 6.25 for the last 2.5-year period as against 12.24 for the preceding 12.5 years. This would indicate that the risk to the diabetic patient for surgery other than that on the extremities is not much greater than for the non-diabetic, provided adequate supervision is given.

Further reduction in the mortality rate in the surgery of the diabetic patient awaits a closer coöperation between the surgeon and internist.

#### BIBLIOGRAPHY

1. McKITTRICK, L. S.: *Surgery and Diabetes Mellitus*. J. M. Soc. New Jersey, 1936, 33, 523.

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## GASTROSCOPIC ASPECTS OF CHRONIC SUPERFICIAL GASTRITIS\*

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The increasing interest manifested by the medical profession toward visual inspection of the gastric mucosa has greatly aided the spectacular progress made by gastroscopy. Within the short space of six years this valuable diagnostic procedure has moved steadily forward, and through the efforts of conservative investigators our knowledge of gastric disease has been definitely advanced.

In previous communications<sup>1,2</sup> the history and technic of gastroscopy have been described in detail. When one looks through the gastroscope the normal gastric mucosa is of a light orange-red color. The folds on the posterior wall are rather heavy and thick, and the valleys between the folds are deep. The appearance is somewhat like the convolutions seen on the surface of the brain. In contrast, the folds on the anterior wall are widely spaced and shallow, and may be absent along the lesser curvature.

The pathologic mucosa, especially chronic superficial gastritis, is easily distinguishable from other lesions. There is a patchy redness of the mucosa, and the folds are edematous, moist and swollen. An abundance of thick tenacious mucus is adherent to many of the folds and at times spreads over the mucosa in curious web-like patterns.

In the clinic of Dr. William Earl Clark and associates, chronic superficial gastritis has been one of the most frequent gastroscopic findings, and an analysis of 14 personally observed cases has been made in order to determine the correlation between the clinical and endoscopic diagnosis.

In this group of cases there were 8 males and 6 females, and, although all were between the ages of 28 and 63 years, the majority were between the ages of 30 and 40 years (table 1).

There was a family history of cancer in 3 cases. Six patients used alcohol, tobacco and coffee in moderation, and 9 ate a carefully selected, well-balanced diet. The symptoms in this group of cases were very interesting. Practically all, or 12 patients, complained of epigastric burning or pain, and in 50 per cent of the cases the discomfort was immediately relieved by taking food or alkali. It would seem well to bear in mind that patients with chronic superficial gastritis can frequently give symptoms indistinguishable from the commonly recognized peptic ulcer syndrome. The duration of symptoms ranged from 6 weeks to 14 years, and although some patients noted periodicity, they were in the minority.

Eleven of the 14 patients were definitely undernourished, and 50 per cent of them were found to have both dental and tonsillar infection. No abnormality of the heart or lungs was noted, but the abdominal examination in 10 cases had point tenderness in the high mid-epigastric region. The gastric analysis revealed normal acid values in 5 cases, and an achylia gastrica in 4 cases. This would indicate a tendency toward low acid values in chronic superficial gastritis, although there is a hypersecretion. There was a slight secondary anemia in 8 cases, with a tendency to leukopenia in a majority. The Wassermann and Kahn tests of the blood were negative. Occult blood was found in the stool in 3 instances. The basal metabolic rate was normal in all cases.

The roentgenologic diagnosis was in error in each of the 14 cases (table 2). Most of the cases reported were worked up and studied elsewhere before they were referred for gastroscopic examination. I do not in any way mean to be critical of these studies. X-ray examinations will probably always be one of the most valuable methods of determining the presence

\* Read at the Annual Scientific Assembly of the Society, April 25, 1939.

TABLE 1  
*Chronic superficial gastritis—essential data*

|       | CASE | AGE | SEX | MAJOR SYMPTOMS                                                                     | X-RAY REPORT              | CLINICAL DIAGNOSIS | GASTROSCOPIC REPORT                               | PATHOLOGIC OR SURGICAL DATA                           | RESULTS OF MEDICAL MANAGEMENT |
|-------|------|-----|-----|------------------------------------------------------------------------------------|---------------------------|--------------------|---------------------------------------------------|-------------------------------------------------------|-------------------------------|
| R. K. | 1    | 34  | M   | Epigastric burning 1-3 hrs. p.c. relieved by food or alkali (5 mos.)               | Negative                  | Functional         | Chronic superficial gastritis                     |                                                       | Improved                      |
| V. H. | 2    | 30  | M   | Epigastric burning 2 hrs. p.c. relieved by food, alkali. Intermittent (2 yrs.)     | Prepyloric ulcer          | Peptic ulcer       | Chronic superficial gastritis                     |                                                       | Recovered                     |
| J. P. | 3    | 55  | M   | Nausea, vomiting, hematemesis (6 mos.)                                             | Polyp                     | Polyp (carcinoma?) | Chronic superficial gastritis with ulcer          | At operation gastric ulcer found. (Section—gastritis) | Death from peritonitis        |
| M. S. | 4    | 40  | M   | Epigastric pain 2 hrs. p.c. relieved by food, alkali (2 yrs.)                      | Negative                  | Functional         | Chronic superficial gastritis, gastroenterostomy  | Previous gastroenterostomy                            | Recovered                     |
| G. F. | 5    | 31  | M   | Epigastric pain immediately p.c. not relieved by food or alkali (14 yrs.)          | Negative                  | Functional         | Mild, chronic superficial gastritis               |                                                       | Recovered                     |
| J. B. | 6    | 39  | F   | Epigastric burning, 1 hr. p.c. relieved by food and alkali. Intermittent (7 yrs.)  | Negative                  | Functional?        | Mild, chronic superficial gastritis               |                                                       | Improved                      |
| A. K. | 7    | 39  | F   | Epigastric burning 2 hrs. p.c. relieved by food and alkali. Intermittent (10 yrs.) | Negative                  | Functional         | Mild, chronic superficial gastritis               |                                                       | Recovered                     |
| C. D. | 8    | 42  | M   | Epigastric pain 1-3 hrs. p.c. relieved by food, alkali. Intermittent (14 yrs.)     | Filling defect. Carcinoma | Pyloric carcinoma? | Chronic superficial gastritis. External adhesions |                                                       | Recovered                     |
| S. P. | 9    | 35  | F   | Epigastric gnawing, nausea, vomiting, hematemesis (3 yrs.)                         | Negative                  | Peptic ulcer       | Chronic superficial gastritis                     |                                                       | Fair results                  |
| P. D. | 10   | 28  | M   | Anorexia, vomiting. Intermittent (3 yrs.)                                          | Cirrhosis. Carcinoma      | Carcinoma?         | Chronic superficial gastritis                     | Antritis resection                                    | Recovered                     |
| L. C. | 11   | 63  | F   | Nausea and vomiting, epigastric soreness (3 mos.)                                  | Prepyloric ulcer          | Carcinoma?         | Chronic superficial gastritis, extrinsic pressure | Retroperitoneal tumor found                           | Died                          |
| J. P. | 12   | 28  | F   | Epigastric pain and nausea (2 yrs.)                                                | Ulcer                     | Peptic ulcer       | Chronic superficial gastritis                     |                                                       | Recovered                     |

(Table continued on next page)



|       |    |    |   |                                                                          |                           |                       |                                              |  |              |
|-------|----|----|---|--------------------------------------------------------------------------|---------------------------|-----------------------|----------------------------------------------|--|--------------|
| W. M. | 13 | 30 | M | Epigastric burning 2 hrs. p.c. relieved by food, alkali. Nausea (6 wks.) | Filling defect. Carcinoma | Functional            | Chronic superficial gastritis. Pigment spots |  | Recovered    |
| A. B. | 14 | 65 | F | Epigastric distress. Difficulty swallowing (1 yr.)                       | Filling defect. Carcinoma | Functional carcinoma? | Chronic superficial gastritis. Pigment spots |  | Fair results |

TABLE 2  
*Chronic superficial gastritis—clinical findings in fourteen cases*

|                                                | NO. OF CASES |
|------------------------------------------------|--------------|
| Habits:                                        |              |
| Alcohol.....                                   | 5            |
| Tobacco.....                                   | 7            |
| Coffee.....                                    | 8            |
| Diet:                                          |              |
| Careful.....                                   | 9            |
| Careless.....                                  | 5            |
| Appetite:                                      |              |
| Good.....                                      | 5            |
| Fair.....                                      | 3            |
| Poor.....                                      | 6            |
| Nutritional state:                             |              |
| Under.....                                     | 11           |
| Normal.....                                    | 1            |
| Over.....                                      | 2            |
| Laboratory:                                    |              |
| Gastric analysis—                              |              |
| Hyperchlorhydria.....                          | 1            |
| Normal.....                                    | 5            |
| Hypochlorhydria.....                           | 4            |
| Achylia gastrica.....                          | 4            |
| Blood—                                         |              |
| Secondary anemia.....                          | 8            |
| Normal.....                                    | 6            |
| Leukopenia.....                                | 11           |
| Stool—presence of occult blood.....            | 3            |
| Focal infection (teeth and tonsils).....       | 7            |
| Abdomen (point tenderness in epigastrium)..... | 10           |

and character of lesions in the stomach and there is only a certain small percentage of error, but now and then when the X-ray may be misleading a gastroscopic study may give us just the evidence that is needed to make a correct diagnosis. This was true in a number of the

cases I am reporting. Every one of the 14 patients had a careful X-ray examination of the stomach. The diagnosis was as follows: in 3 cases, prepyloric ulcer; in 4 cases, gastric carcinoma; in 1 case, polyp; and in 6 cases the report was negative. The clinical diagnosis was peptic ulcer in 3 cases, possible malignancy in 3 cases, and functional derangement of digestion or "nervous indigestion" in 8 cases. All of these patients were gastroscoped, and in each instance no malignant lesion, polyp or ulcer was observed, but there was unmistakable evidence of chronic superficial gastritis. These patients have been treated over the past two years with bland diet, gastric lavage, aluminum hydroxide, crystalline Vitamin C (25 mg. or 500 international units twice daily), and removal of focal infections, with remarkably good results. Subsequent clinical and roentgenologic observations reveal no evidence of ulcer, polyp or malignancy.

CONCLUSIONS

On the basis of 14 cases of chronic superficial gastritis observed gastroscopically, it would appear that the clinical syndrome of this condition may simulate serious gastric disease such as ulcer or carcinoma.

The recognition and energetic treatment of this condition is essential for cure.

In the differential diagnosis of obscure or suspected gastric disease, gastroscopy should be employed.

BIBLIOGRAPHY

1. GEIER, F. A. J.: Gastroscopy. M. Ann. District of Columbia, 1937, 6, 161.  
2. GEIER, F. A. J.: Gastroscopic Studies. Am. J. Digest. Dis., 1938, 5, 218.

# ACUTE BENIGN SYPHILITIC HEPATITIS

## REPORT OF TWO CASES

GEORGE W. CRESWELL, M.D., *Associate in Dermatology and Syphilology, George Washington University School of Medicine*; ROBERT F. GOLDEN, M.D., AND CHARLES S. COAKLEY, M.D., *Resident Physicians, George Washington University Hospital*

The occurrence of undoubted acute benign syphilitic hepatitis is rare. The incidence as recorded in the literature varies from less than 1 per cent to 3 per cent.<sup>1, 2, 3</sup> Our two cases are reported not only because of their rarity but also because of their prompt therapeutic response to arsenoxide.

The most important clinical sign of acute benign syphilitic hepatitis is jaundice, with or without enlargement of the liver. Other signs in addition to a chancre or the secondary lesions of syphilis are rapid loss of weight, the presence of bile in the urine, acholic stools and the usual symptoms that accompany jaundice, such as itching, depression, gastric distress and dry skin.

The differential diagnosis depends entirely upon the presence of a chancre or secondary syphilitic lesions and the prompt response to anti-syphilitic therapy.<sup>1, 2</sup>

Since there is no record of a microscopic study of liver tissue in acute benign syphilitic hepatitis, the usual statements regarding the pathology are debatable and perhaps inaccurate. Some claim that in acute syphilis of the liver there is not only involvement of the parenchyma but primary involvement of the blood vessels with secondary changes. Others suggest the possibility of a diffuse inflammatory factor with proliferation. A roseola of the bile ducts, condyloma of the ampulla and pressure from enlarged glands in the portal fissure are other causes offered for this disease.

In cases of early syphilis when the liver is enlarged and a mild jaundice is present, most syphilologists advise that treatment with one of the heavy metals should be begun to avoid the Herxheimer reaction. Later, when the arsphenamines are introduced, it is important to use small initial doses, such as 0.1 or 0.2 gram. The

iodides are of no value for this condition. A high carbohydrate diet is essential on the assumption that the liver cells, being full of glycogen, do not take up the heavy metal and no further damage is caused. Moore<sup>2</sup> says there is no reason for not beginning the treatment with arsphenamines, as in any other case of early syphilis. Stokes<sup>3</sup> advises the immediate use of bismuth, followed by small doses of arsphenamine.

**Case 1.** A male negro, aged 19 years, was admitted to the clinic on October 10, 1937, with complaint of weakness, loss of weight, sore throat and "bad" blood. About 7 weeks previously there had been a sore on the shaft of the penis, which had healed with local applications obtained at a drug store. Because of the sore throat he had consulted a medical clinic elsewhere, where the routine Wassermann test revealed a positive reaction. He had lost 19 pounds in 2 months. The family history was irrelevant. There was past history of regular clandestine sexual companionship and periodic indulgence in alcoholic intoxicants.

Physical examination showed a negro of well-developed physique, apparently not ill. He was markedly jaundiced, especially in the sclerae. A circinate lesion, typical of syphilis in the negro, was present on the corner of the right side of the mouth at the mucocutaneous junction. The skin over the whole body was dry, with a cracked appearance. Mucous patches were present in the mouth. The pharynx was injected. The pupils were equal and regular and reacted to light and to accommodation. The fields of vision and extra-ocular movements were normal. The thorax was essentially negative. The abdomen showed only tenderness over the liver area. The inguinal glands were enlarged and palpable but not painful. The spleen was not palpable. The genitalia appeared normal except for a healed lesion on the shaft of the penis. The superficial and deep reflexes were active. The stools were chalky and clay-colored. Gross bile was present in the urine.

The blood Wassermann and Kahn tests were both four plus on October 10, 1937. The Van den Bergh reaction was immediate direct, and there was 10 mg. of bilirubin in 100 c.c. of blood. The icterus index was 36.

Treatment consisted of 0.2 Gm. of bismuth subsalicylate intramuscularly, followed by 7 weekly intravenous injections of 0.06 Gm. of arsenoxide. The icterus index was performed at weekly intervals with readings of 36, 58, 44, 34, 25, 14, 12, and 5.

It is interesting to observe that the initial treatment with bismuth subsalicylate caused a flare-up (Herxheimer effect), as indicated by an increase in the icterus index from 36 to 58.

**Case 2.** A male negro, aged 26 years, was admitted to the clinic on February 16, 1939, complaining of a dull pain and "misery" in the abdomen. About 2 months previously there had been a penile lesion with an inguinal "bubo" which had been incised and drained. Three weeks before admission there had been dull pains in the abdomen, especially after meals, accompanied by nausea but no vomiting. A friend had told him that his eyes were very yellow. There was nothing impressive in the family history.

Examination revealed a negro of fair development, with a distressed expression. He was markedly jaundiced, especially in the sclerae. A scar was present on the shaft of the penis. The skin was dry. The pupils were equal and regular and reacted normally to light and accommodation. The thorax was essentially negative. The abdomen was tender over the liver area. The spleen was not palpable. The stools were clay-colored and chalky. There was gross bile in the urine.

On February 16, 1939 Wassermann and Eagle tests of the blood were strongly positive. The qualitative Van den Bergh reaction was biphasic, and there was 28.1 mg. of bilirubin in 100 c.c. of blood. The icterus index was 100.

Treatment consisted of 0.2 Gm. of bismuth subsalicylate intramuscularly on the day of admission, followed by weekly intravenous injections of 0.06 Gm. of arsen-

oxide. The icterus index performed at weekly intervals was 100, 87, 74, 60, 52, 28, 25, 20, 12 and 5.

#### COMMENT

Roth and Creswell,<sup>4</sup> using arsenoxide in the treatment of syphilis where the standard arsenicals were not well tolerated, found that arsenoxide could be used with relative safety in the cases of liver damage which followed the use of arsphenamines.

Arsenoxide seems particularly indicated in this type of liver disease since it was shown in case 1 that a "flare-up" was caused by bismuth, but not by arsenoxide.

Perhaps the most important feature of the clinical behavior of these two cases is the fact that the jaundice promptly subsided in each under proper antisyphilitic therapy. Furthermore, both patients showed decided clinical improvement as shown by the gradual disappearance of both the subjective symptoms and objective signs. These facts strongly indicate the presence of acute benign syphilitic hepatitis in each instance.

#### BIBLIOGRAPHY

1. WAUGH, J. R.: Benign Hepatitis of Early Syphilis. *Arch. Dermat. & Syph.*, 1937, 36, 599.
2. MOORE, J. E.: *The Modern Treatment of Syphilis*. Springfield, Ill., Thomas, 1933.
3. STOKES, J. H.: *Modern Clinical Syphilology*. Philadelphia, Saunders, 1934.
4. ROTH, G. B., AND CRESWELL, G. W.: Chemicobiological and Clinical Behavior of Arsenoxide (Mapharsen). *M. Ann. District of Columbia*, 1937, 6, 195.

**Danger of Use of Sulfanilamide in Cases of Tuberculosis.** Recent reports that sulfanilamide has proved beneficial in the treatment of tuberculosis has drawn a warning from the National Tuberculosis Association. The serious consequences which might ensue should tuberculosis sufferers take sulfanilamide compounds for the treatment of this disease are emphasized by Dr. H. J. Corper, Research Director of the National Jewish Hospital of Denver, Colorado, and associates. Results of their tests do not mean that a tuberculous patient who has developed pneumonia or streptococcal infection cannot use the drugs as prescribed for those conditions, but that the use of the drug should be confined to the treatment of pneumonia and streptococcal infections.

"The tests have demonstrated that the utmost caution is required in evaluating the action of the drugs in tuberculosis. When given for a short time to man and animals, sulfanilamide and similar drugs are not evidently poisonous, but if given over an extended period become profound blood and cell poisons. It is these effects which have led to the erroneous deductions. The animal that is poisoned from the prolonged use of large amounts of sulfanilamide and allied drugs, such as sulfapyridine, cannot produce tubercle cells in certain

organs as readily as ordinary tuberculous animals do, and so two things happen.

"In the first place, a deception occurs in that these organs only appear to have less tuberculosis; secondly, but even more important, since the tubercle cells are the ones that actively fight tuberculosis and help maintain the health of the individual not treated with sulfanilamide, the injury of these organ cells as well as the blood cells actually is harmful to the patient, rather than an aid in fighting his tuberculosis.

"This should serve as a timely caution to save the tuberculous from unnecessary injury from the use of drugs until they are exactly tried out in the research laboratory on test animals and by competent analysts. This is especially urgent in an involved and intricate disease problem such as tuberculosis presents and in which all the phases must be thoroughly understood before conclusions as to the value of the drug for man can be drawn.

"These compounds (sulfanilamide and sulfapyridine) do not affect tuberculosis but injure body cells, the reacting cells."

Maurice L. Cohn, Ph.D., and Clarence Bower, Ph.D., collaborated with Dr. Corper in his research findings.



# MEDICAL ANNALS

of the

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### WAR AND AMERICAN PHYSICIANS

The tragedy of war is upon the world. European nations are again engaged in a death struggle. Our country has made it clear that she intends to remain neutral. We hope nothing will shake her in this resolution, for war solves nothing and breeds only hatred and distrust, the seeds of armed conflict.

Whatever our role may be in the future, our first duty now is to our own country. We must be wary of the flood of propaganda which is sweeping the land. When newspapers are devoting nearly all of their pages to war and the radio brings hourly reports of developments to our firesides, there will of necessity be many points of view presented and much information that is not based on fact. This is no reflection on our news gathering agencies which are endeavoring to do an honest job. We should therefore be discriminating and not allow our sympathies and prejudices to make us forget our responsibilities at home. Herein lies a real danger. And medicine is not unaffected by this situation. It too may become forgetful of its obligations.

While the European war will influence our lives to an extent yet unknown, our domestic problems will still be with us. Some of these have engaged wide attention and their solution may have a profound effect on our lives. An

apt example is the controversy involving medical care. Inadequacies of the present system, we are told, must be remedied, although there is a difference of opinion as to how this should be done. Legislative proposals of unprecedented scope were presented to Congress at its last session. They are to be revived in the next Congress. Supporters have indicated that they will aggressively carry on their fight until rewarded with success.

Now, here is a matter to which the medical profession must give serious thought. It is not something that can be put off, for it needs our immediate and thoughtful attention. To allow ourselves to be diverted by the European debacle from the problems which urgently need our active interest is to fail in our duty. Adoption of a national health program which does not meet the needs of the people and which is not fundamentally sound would be a tragedy of no small consequence to this country. Our sympathies are and should be with the unfortunate people of Europe, but our real responsibilities are here and must not be neglected.

### GROUP HEALTH ASSOCIATION HELD A COÖPERATIVE

On September 11, 1939 the United States Court of Appeals for the District of Columbia decided the appeal of the Superintendent of Insurance concerning certain aspects of the operations of Group Health Association, Inc.

The opinion of the Court of Appeals was rendered by Justice Rutledge. It is lengthy and because of its interest will be considered briefly in an effort to make clear what the Court considered and decided.

This appeal grew out of a suit filed by Group Health Association, Inc., against the Superintendent of Insurance and the United States Attorney for a declaratory judgment. Group Health Association, Inc., sought a decision that it was not illegally practicing medicine or illegally engaged in an insurance or indemnity business.

In the District Court, Judge Bailey decided that the corporation was neither illegally engaged in

the practice of medicine nor in an insurance or indemnity business.<sup>1</sup>

No appeal was taken by the United States Attorney from that portion of Judge Bailey's opinion determining that the Association was not illegally practicing medicine. An appeal was taken by the Superintendent of Insurance from that part of the decision concerning the insurance and indemnity activities of the Association.

The principal issue before the Court of Appeals was whether the Association was engaged in the business of insurance or issued contracts for the payment of an indemnity on account of sickness or accident.

A secondary question related to whether or not the activities of the Association came within the exemptions of Section 653 of the Code<sup>2</sup> and the Revenue Act of 1937.<sup>3</sup>

In affirming the judgment of the District Court that the Association was not illegally engaged in an insurance business or in issuing contracts for the payment of indemnity on account of sickness or accident, the Court of Appeals held:

1. Group Health Association, Inc., was "a consumer coöperative" and its functions "are not identical with those of insurance or indemnity corporations."

2. The Association "falls clearly within the exempting proviso of Section 653" of the Code "and the similar, though more extensive one of the Revenue Act of 1937," and "is relieved from the requirements of Section 653" of the Code "and of Section 8, Title 2 of the Revenue Act of 1937."

While no attempt will be made to consider exhaustively the arguments and authorities upon which the Court relied, certain aspects of the opinion will be discussed briefly to indicate the reaction of the Court to the contentions of the Corporation Counsel.

The Appellate Court found the Association was incorporated in 1937 "as a non-profit corporation" under the provisions of the Code authorizing "incorporation of Associations for benevolent, charitable, scientific and other purposes including mutual

improvements"<sup>4</sup> and "issues no policies, formal certificates, or contracts" to members.

In effect, the Court held the Association "cannot and will not regulate or control the physician" made available to a member and assumes only to make contracts for needed service, but does not agree to provide this service or see that it is supplied; the Trustees of the Association determine or modify the extent of the service made available; the Medical Director of the Association may determine the extent of the services; the Association does not guarantee that any needed services will be rendered; assumes no liability for any act of omission or commission by the rendering physician; and finally "assumes no liability" if such services are not rendered as its only obligation is "to use its best efforts to procure the needed services."

After characterizing the obligation of the Association to its membership as "tenuous," while not deciding "its essential fairness" or "any question of sufficiency of consideration of mutuality or obligation," the opinion states the "attenuated character" of the obligation is pertinent to the issue of whether the agreement is a contract of insurance or one of indemnity.

In deciding that the obligation of the Association was neither a contract of insurance nor one of indemnity, the Court said that true contracts of insurance or indemnity involve "contractual security against anticipated loss." It held there must be a risk of loss to which "one party may be subjected" and an assumption of that loss by a "legally binding arrangement by another." "Hazard," said the Court, "is essential" and insurance "involves distribution of risk." In applying these principles to the activities of the Association, the Court determined that the preventive phase and other aspects of these activities and the plan should be considered as a whole.

Although the Association's activities "may be considered in one aspect as creating security against loss" when considered as part of the whole plan, the Court was of the opinion that "they constitute the purchase of well-rounded continuous medical service by its members" and function as "a consumer coöperative."

It was admitted on appeal that an identical plan and service, "if offered by an organization owned,

<sup>1</sup> Group Health Association v. Moore, 24 F. Supp. 445.

<sup>2</sup> Section 179, Title 5, D. C. Code (1929).

<sup>3</sup> D. C. Revenue Act of 1937, Title 2, approved August 17, 1937. (D. C. Code) (Supp. III, 1937), Title 20, Section 966.

<sup>4</sup> Sections 121-126, Title 5, D. C. Code (1929).



operated and controlled by physicians would not be insurance or indemnity." With this admission before it the Court held that if a physicians' organization furnished "service," then the Association furnished "service."

In concluding that the functions of the Association "properly cannot be brought within the laws relating to insurance or indemnity," the Court considered the many cases cited, dealing with insurance and indemnity activities under varied and different state statutes, as confusing. In deciding that Congress "did not intend when it enacted Section 653 or the other insurance laws of the District" to deal with activities similar to those undertaken by the Association, the Court stated the Association "is a distributing, and not an accumulating, agency."

In any event the Court decided that membership in the Association was "limited to employees of the executive branch" of the Government.<sup>5</sup> This was held to exempt the activities of the Association from the requirements of Section 653 and Section 8, Title 2 of the Revenue Act of 1937.

The argument of the Superintendent of Insurance that "serious consequences for effective regulation of insurance activities" would result if the Association were held to be free from the provisions of the insurance laws, was rejected by the Court of Appeals. The Court stated, "experience to date with consumer coöperatives organized and limited in their activities . . . has not shown that they are susceptible of the abuses feared." If control is necessary, the Court said it "should be enacted by the legislature" and not "through judicial expansion of existing statutes."<sup>6</sup>

In considering this decision it must be kept in

mind that the opinion rests largely, if not entirely, upon the provisions and language of the insurance laws of the District. When dealing with situations outside the District, a reference and study must be made to applicable state laws, regulations and decisions.

## PERTINENT PARAGRAPHS

The extent to which The Medical Society of the District of Columbia coöperates with departments of the Federal Government is not generally known by either the public or the medical profession. And that is not surprising, for little has been said about it. We believe it only proper to direct attention to this activity of the Society because of the impression which has gained currency in Washington that the local medical organization is uncoöperative where public matters are concerned.

In the past few years the Society has placed at the disposal of the Federal Trade Commission the services of several physicians who have testified in Court as to the validity of the claims made by individuals or firms for drugs and therapeutic devices. If it were possible, we would publish their names. However, it cannot be done because there is no accurate or complete list of the physicians who have lent their aid. For this reason we must be content to comment only in a general way upon the assistance which has been and is now being given by the Society to the Government.

Services similar to those provided the Federal Trade Commission have been given to the Post Office Department, Federal Communications Commission, and the District Attorney's Office.

Only a few months ago members of the Society volunteered to examine a large number of N.Y.A. youths employed on W.P.A. projects in the District of Columbia. Within the past month the Society's Speakers' Bureau participated in a W.P.A.-sponsored health educational program in coöperation with the District Health Department.

Requests for information are frequently received from various Government departments

<sup>5</sup> Employees of the Home Owners' Loan Corporation were held to be "employees of the executive department." (*Commonwealth ex rel Kelly v. Rouse*, 163 Va. 841, 178 S. E. 37 [1935].) While dependents as well as members receive service the Court regarded "this as properly within the function of relief to the member."

<sup>6</sup> Judge Proctor in construing Section 3 of the Sherman Act, and in sustaining demurrers to the "Anti trust" indictment against four medical societies and twenty-one individual doctors, reached a similar conclusion when he held the Sherman Act not applicable to the activities charged in the indictment and that the Courts should not stretch an old statute to fit new uses for which it was never intended. *Opinion J. Proctor, United States v. American Medical Association, et al*, Criminal No. 63,221, (D. C. D. C., 1939).



and every effort is made to comply with them. It is surprising how much important data the Society has which official agencies of the Government find essential.

Incomplete as this resumé of Medical Society coöperation with the Government is, it should be sufficient to indicate that beneath the controversial issues, which undoubtedly make better copy for newspapers, there has been and continues to be a friendly relationship.

At a general meeting of the MUTUAL HEALTH SERVICE on September 27, 1939, the creation of a Lay Advisory Council was announced. Its chairman is Mr. Robert V. Fleming, President and Chairman of the Board of the Riggs National Bank. Associated with him on the Council are: Mr. Edward F. Colladay; Mr. James E. Colliflower, President of James E. Colliflower and Company, Inc.; Mr. Charles B. Dulcan, Sr., Vice President and General Manager of the Hecht Company; Mrs. Joshua Evans, Jr.; The Reverend Norman Gerstenfeld; Mr. M. G. Gibbs, President of Peoples Drug Stores; Mr. Coleman Jennings; Mr. Edward D. Merrill, President of the Capital Transit Company; Mr. William Montgomery, President of Acacia Mutual Life Insurance Company; Mr. A. G. Neal, Acting President and General Manager of the Potomac Electric Power Company; Mrs. Ernest Feild Parkinson; Mr. Ord Preston, President of the Union Trust Company; Mr. H. L. Rust, Jr., President of H. L. Rust Company; Mr. John Saul, President of B. F. Saul Company; The Very Reverend Msgr. Lawrence J. Shehan; Mr. Marcy L. Sperry, President of the Washington Gas Light Company; Mr. Lawrence E. Williams, President of the Washington Board of Trade, and Mr. Lloyd B. Wilson, President of the Chesapeake and Potomac Telephone Company.

Others who have been invited to serve on the Council will undoubtedly accept. Their names will be announced at a later date. It is indeed fortunate that these civic and public leaders have agreed to lend their support. With their

assistance the Medical Society's service program should receive wide public attention.

There are still 298 physicians who have failed to return the questionnaires sent them in connection with the classification of physicians according to type of practice. By the first of October, 586 had returned their questionnaires. While ordinarily this would be an excellent response, it is essential in this instance that all Society members return their forms.

As has previously been announced, the classification is to be used by the Society's Office to provide information to the public. No physician's name will appear on this list unless he has returned his questionnaire. If a member has lost the form sent him, he should call the Society's Office and request another, which will be forwarded to him promptly.

One over the required number of applicants subscribed to Group Hospitalization, Inc., before the books were closed as of September 1, 1939. To be exact, 251 Society members applied for membership and were accepted.

A number of physicians have called the Society's Office since the middle of September stating they were out of the city when the Society was canvassed and that they wished to subscribe. However, applications which are received now will not take effect until March 1, as the books of Group Hospitalization will not again be open to Medical Society applicants until that date. Members desiring to do so may send their applications together with their checks payable to The Medical Society of the District of Columbia at any time before February 25. Which reminds us that a great number of physicians who have already subscribed made their checks payable to Group Hospitalization, when they should have made them payable to the Medical Society. In accordance with the rules of Group Hospitalization, the Medical Society acts as group treasurer, depositing all checks and issuing a check of its own to cover the total amount of dues.

A report was submitted by the Secretary to the Executive Board at its meeting on September 25 in connection with the proposed telephone-secretarial bureau. Three hundred and thirty-five members having already indicated that they would subscribe to a Society-owned bureau providing the rates are satisfactory, the Board had directed the Secretary to develop plans to be submitted for its consideration. After some deliberation the Board decided that further consideration should be given this project at its January meeting.

Members desiring copies of legislative proposals, Government reports and Court decisions relating to medicine can obtain them through the Society's Office. Where possible, these will be furnished gratis. In some instances, how-

ever, it will be necessary to require members to pay the cost of these documents.

A folder describing the Society's health educational services is being prepared by the Committee on Public Relations, with special emphasis on the Speakers' Bureau. Topics of talks prepared by members of the Society for lay audiences are being listed in the folder, which will soon be ready for distribution to the public.

A communication has been received by the Secretary from the District Health Department urging that death certificates be executed promptly by physicians. The law requires that a physician report a death within 48 hours. The information on the certificate should be accurate and complete in every respect.

### INTRODUCING THE MEDICAL GUIDE

An experiment which may have a far-reaching effect upon the present method of supplying medical care to the indigent and underprivileged has been in operation for several months in the District of Columbia. The project was undertaken upon the suggestion of Mrs. Thomas Parran, representing the Washington Self-Help Exchange. In January, 1939, Mrs. Parran suggested to Dr. William J. Mallory, then President of the Medical Society, an arrangement whereby the Society could be of assistance to the Exchange in surveying its health problems. The Society gave its approval to the proposal and created the Advisory Committee to the Washington Self-Help Exchange with instructions to make the study requested. Appointed to the Committee were Dr. Thomas E. Mattingly, Chairman, Dr. Sterling Ruffin and Dr. E. W. Higgins.

Immediately following these appointments a meeting was arranged, attended by Mrs. Thomas Parran, Mrs. Harlan Fiske Stone, Mrs. David Cushman Coyle, Mrs. Henry Grattan Doyle and Miss Edna Lonigan. It was learned

at this meeting that the Washington Self-Help Exchange was a coöperative venture in which an endeavor was made to preserve the self-respect of the underprivileged. The Committee was informed that only unemployed who agreed to earn by their own labor the necessities of life were eligible for participation. In exchange for their labor, participants, employed in various departments of the Exchange, received scrip. The scrip was redeemable at the Exchange store where essential commodities are valued in terms of the cost of their production. For example, a participant working an hour on the woodpile or in the shop earns units of scrip which have no cash value but which can be exchanged for designated units of food, clothing or household furniture, the latter being mostly salvaged material donated by friends of the movement. Although the objective was to make the project entirely self-sustaining, it is supported in part by Federal and private funds. In no way does it compete with private enterprise, confining itself entirely to helping its own members.

It was first proposed to the Committee that physicians who volunteered to serve at the Exchange should be paid with scrip. This arrangement was not acceptable for various reasons and it was finally agreed that the scrip should be donated to the Health Security Administration to be used as it saw fit.

In regard to medical services which a study of conditions at the Exchange might reveal were necessary, it was agreed that there should be no duplication of existing facilities in the District of Columbia; further, that a clinic along the conventional lines at the Exchange would duplicate those already in operation at convenient locations. At this point in the discussion the present experiment was conceived.

To Mrs. Parran the Committee is indebted for the introduction of the medical practitioner in a new role, that of the Medical Guide. Mrs. Parran suggested in a communication to the Society the need for physicians who would be willing to give their personal guidance to persons dependent on public agencies and private philanthropies for necessary medical care. Her views were set forth in such a convincing and logical manner that the Committee was deeply impressed. She said in part:

"I had hoped you would be willing to initiate a demonstration, no matter on how small a scale, in which some one physician might take responsibility for some one patient and would maintain the confidential doctor-patient relationship throughout the continuity of services by which that person's needs are met. In other words, as I understand it, any definition of good medical care makes desirable the maintenance of the doctor-patient relationship. The opposite of that is the unrelated succession of clinics through which patients frequently pass at the suggestion or insistence of the social worker.

"... we seek a personal relationship in which we have medical intelligence directing the use of public or semi-private facilities.

"For myself and for the Board, may I say that I would rather provide ten of our people with medical care of the family doctor type during the coming year than to have the most skilled and experienced social worker route our entire population of participants through the maze of clinical services now available in Washington."

The Committee felt that this was a challenge expressed in terms of the idealism and tradition of the medical profession, and it agreed to lend its full coöperation.

Realizing that some limitation must be placed upon any plan providing medical care, it was agreed to restrict the experiment to the rehabilitation of those whose handicaps were remediable. By thus limiting the scope of the program the project would, of course, be more practical and not a burden upon the medical profession. The arrangement agreed upon was nothing more nor less than the application of the basic principle of private practice wherein the private physician requisitions whatever consultative services are necessary to supplement his own ability and resources. It was the Committee's purpose to devise a means whereby the best possible service could be given and at the same time to conserve the resources available by using them economically and with maximum effectiveness. Experience has convinced the Committee that a personalized service intelligently and discriminately used can effect major economies without jeopardizing the results.

All of the social and welfare agencies in Washington dealing with the problem of medical care for the underprivileged are coöordinated in a bureau known as the Health Security Administration. In the office of Mr. Ross Garrett, its Administrator, are handled the complex problems of determining eligibility of applicants, routing them through the proper diagnostic clinics, and maintaining a centralized system of social histories and clinical records. A brief appraisal of the situation convinced the Committee that it would be impossible to organize any system of personalized service for the underprivileged group at the Washington Self-Help Exchange without materially modifying the requirement that all persons applying for medical care do so through the Health Security Administration. Negotiations with Mr. Garrett and with responsible heads of the Outpatient Departments of Washington's two medical



schools, Dr. John Cavanagh of Georgetown University School of Medicine and Dr. John A. Reed of George Washington University School of Medicine, resulted in an arrangement whereby the Medical Guide was to be permitted to requisition diagnostic and therapeutic facilities deemed necessary to carry out the Society's agreement in a manner which would assure a maximum of efficiency and a minimum of red tape and delay. The Guide, it was agreed, should appraise the medical needs of persons applying for assistance just as he would in private practice. In each instance he was to follow the patient through until the conclusion of his treatment. In other words, if the patient went to one clinic and it was found necessary for him to go to another, he would return to the Guide, who would discuss the matter with him, and if the Guide deemed it advisable, requisition additional services. For the experiment, a simple record form was designed which made it possible for the Health Security Administration to fulfill its obligations. The form accompanied the patient with all pertinent data appended, which formed the final permanent record kept on file at the Administration.

Fifty-eight cases have come under the supervision of Medical Guides at the Exchange, each of whom volunteer to serve two hours a week for a month, since the experiment went into effect in February, 1939. Their disabilities have ranged from those requiring little more than psychological readjustment to those that are of advanced and even of uncorrectable pathology. Laboratory procedures, such as Wassermanns, urinalyses and hemograms, have been most frequently requisitioned, supplemented, of course, when needed, by authoritative findings and recommendations of the roentgenologist, the internist and the surgical consultant. A final report assembled on a single form from the various consultative services is checked by the Medical Guide. He prescribes and directs therapy when and if necessary but does not himself treat the patient. If hospitalization is required, in the opinion of the Guide,

it is so ordered. On several occasions the Guide's problems have been complicated by factors beyond his jurisdiction. For example, several patients were unable to provide dentures after the removal of their teeth for advanced dental sepsis. Arrangements, however, were made with the District of Columbia Dental Association and the Health Security Administration whereby this need was satisfactorily met. Then, too, in some cases the Guide was confronted with the possibility that the patient's disability was due to the aggravation of injuries covered by the workmen's compensation insurance, benefits to which the patient was apparently not entitled because of the lapse of time. It was learned, however, that the local Bar Association had already provided means to make the necessary investigation.

Experience to date leads the Committee to believe that the medical profession might seriously consider the desirability of applying the Medical Guide principle whenever feasible in working out problems of medical care for the indigent and the underprivileged. Quite obviously, it is an impossibility at the present time to personalize all medical care for those unable to pay for it, desirable as that objective might be. In the present situation medical care of the indigent will continue to be cheerfully donated by the profession and for the most part it must continue to be administered by public and private health agencies. However that may be, the Medical Guide idea has demonstrated that it is workable and that it is one which may have considerable significance.

#### PROGRAM OF THE SECTION ON GASTROENTEROLOGY

One of the most successful sections in the Medical Society is the Section on Gastroenterology. This year it is trying out a new program. It plans to hold four meetings during the year, one of these to be presented before the Medical Society, the other three meetings being held at the homes of its members.

The Section is anxious to acquaint members of the Society with the fact that if interested they will be welcomed at its meetings. All that need be done is for the member to signify his interest in the Section by communicating with the Secretary, Dr. Robert S. McGrath, 1832 Eye Street, N. W. Membership dues are \$2.00 annually.

The first meeting of the Section was held at the home of the Chairman, Dr. John A. Reed on October 2. Dr. Nolan D. C. Lewis, Director of the New York State Psychiatric Institute and Hospital, and Professor of Psychiatry at Columbia University, addressed the group on the subject, "The Nervous and Mental Signs of Gastrointestinal Disorders."

The second meeting will be held at the home of Dr. Leo T. Brown, December 4, and the fourth and last meeting at the home of Dr. William M. Ballinger, April 1, 1940. The meeting with the Medical Society is scheduled for February 14, 1940.

The following is the program for the remainder of the year 1939-40:

*Monday, December 4, 1939:* "Ulcerative Colitis—General Discussion," Thomas T. Mackie, M.D., New York City (member of American Gastroenterological Society).

*Wednesday, February 14, 1940:* Symposium and Panel Discussion on Peptic Ulcer to be presented before The Medical Society of the District of Columbia.

1. "Comparative Analysis of the Results of Various Forms of Medical Management of Peptic Ulcer," Ernest H. Gaither, M.D., Baltimore (President, 1938-39, of the American Gastroenterological Society).

2. "End Results and the Surgical Approach to Peptic Ulcer," George P. Muller, M.D., Professor of Surgery, Jefferson Medical School, Philadelphia.

3. Panel Discussion—Questions  
Medicine—Dr. Ernest H. Gaither  
Surgery—Dr. George P. Muller  
X-Ray—Lieut. Col. Henry W. Grady, Walter Reed Hospital  
Pathology—Dr. Roger M. Choisser, Professor of Pathology, George Washington University School of Medicine

4. General Discussion and Questions

*Monday, April 1, 1940:* Program to be announced.

## THE DAVIDSON LECTURE

Biennially a lecturer is selected to deliver the Davidson Lecture before the Medical Society on a topic dealing with his own research. Established in 1929, in commemoration of the outstanding service rendered the Washington profession by Dr. Edward Young Davidson, the lecture has attracted wide attention. In 1936 the then Executive Committee adopted a resolution to put the selection of the lecturer on a competitive basis. The Davidson Lecture, it was believed, should mean more than the opportunity of hearing a paper prepared by the hand of some great master. It should be a stimulus to local talent to higher performance. It was accordingly agreed that "the selection of the Davidson Lecturer shall be on the basis of competition, the winning essay to be selected by a subcommittee consisting of five members of the Executive Board appointed by the Chairman..." The second Wednesday in October of odd numbered years was fixed as a permanent date for these lectures.

The Subcommittee of the Executive Board assigned the task of making the award this year were: Dr. William J. Mallory, Chairman; Drs. Thomas E. Neill, Henry C. Macatee, Don Johnson and Daniel L. Borden. As a result of its deliberations, it has been announced that Dr. Walter Freeman's paper entitled "The Surgery of Mental Disorder" was deemed the most suitable of the papers which were submitted. However, the Subcommittee has advised the Executive Board that the essays submitted were uniformly excellent and it was gratifying that so many participated in the contest. It was no easy task for the Subcommittee to decide as to the comparative merits of the essays received.

It is a distinction for a physician to receive the Davidson Lecture Award and the Subcommittee feels that Dr. Freeman is most worthy of it.

Dr. Walter Freeman, who has been Professor of Neurology at George Washington University School of Medicine since 1927 and lecturer in neuropathology at the U. S. Naval Medical School since 1924, was born in Philadelphia, Pa., November 14, 1895. He received his A.B. degree from Yale in 1916 and his degree in medicine from the University of Pennsylvania in 1920. He was anatomist at the Philadelphia General Hospital in 1920-21 and assistant



pathologist in 1923. In 1923-24 he studied neurology in Paris and Rome. He received an M.S. degree from Georgetown University in 1929 and a Ph.D. in 1931. He is a diplomate of the National Board of Medical Examiners and the American Board of Psychiatry and Neurology.

Dr. Freeman began medical practice in Washington, D. C., in 1926. He was director of laboratories at Saint Elizabeths Hospital from 1924 to 1933 and is now consulting neurologist. He is also attending

Estonian Neurological Society. Dr. Freeman has held various offices in these societies. He has been secretary of the American Board of Psychiatry and Neurology since 1935; president of the Washington Society of Pathologists in 1929; and president of the Washington Society of Nervous and Mental Diseases in 1931. He was chairman of the Section on Nervous and Mental Diseases of the American Medical Association in 1930-31. At present he is serving the Medical Society as a member of the Board of Censors.

The American Medical Association awarded him a bronze medal for his distinguished services in 1931. He is the author of a book on "Neuropathology," published in 1933, and he has been a contributor for many years to numerous scientific publications.

### CALENDAR FOR COMING MEETINGS

**Friday, October 20:** *Section on Ophthalmology and Otolaryngology.*

"The Diagnosis and Treatment of Laryngeal Tuberculosis," illustrated with lantern slides, Edward A. Looper, M.D., Professor of Otolaryngology, University of Maryland Medical School.

"The Non-Surgical Treatment of Malignant Lesions of the Larynx," William H. Jenkins, M.D.

**Wednesday, October 25:** The Syphilis Journal Club, under the direction of Dr. William H. Hough, will sponsor the following program:

"Practical Considerations of Immunity in Syphilis," Jarold E. Kemp, M.D., Chicago, Illinois.

"Laboratory Limitations in Diagnosis," H. H. Hazen, M.D.

"Syphilis and Personality Disorder," Ernest E. Hadley, M.D.

"Economic and Social Aspects of the Control of Syphilis," William F. Snow, M.D., General Director, American Social Hygiene Association.

**Wednesday, November 1:** Business Meeting

**Thursday, November 2:** *Section on Neurology and Psychiatry.*

"Psychotherapeutic Problems in Schizophrenia," Frieda Fromm-Reichmann, M.D.

"Tuberous Sclerosis. Report of a Case," Walter Freeman, M.D., and Herbert Schoenfeld, M.D.

**Wednesday, November 8:** The Washington Urological Society, under the direction of Dr. William P. Herbst, Jr., will present the following program:

"Surgical Procedures in Urology," James T. Priestley, M.D., F.A.C.S., Mayo Clinic, Rochester, Minn.

**Wednesday, November 15:** The Washington Heart Association, through its program chairman, Dr. Austin Chinn, will present a lecture by Tinsley R. Harrison, M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine, Nashville, Tenn., on the general subject of recent advancements in the study of hypertension and renal disease.



WALTER FREEMAN, A.B., M.D., M.S., Ph.D., F.A.C.P.  
*The Davidson Lecturer, 1939*

neurologist at Gallinger Municipal and George Washington University Hospitals.

Dr. Freeman holds membership in many scientific organizations. He became an Associate Member of The Medical Society of the District of Columbia in 1927 and was elected to Active Membership in 1930. He is also a member of the American Medical Association, the American Neurological Association, the American Board of Psychiatry and Neurology, the American College of Physicians, Philadelphia Neurological Society, Washington Society of Nervous and Mental Diseases, Washington Society of Pathologists, and Washington Academy of Medicine. He was formerly corresponding member of the



## NEWS AND PERSONALS

The **Annual Conference of Secretaries of Constituent State Medical Associations** will be held on Friday and Saturday, November 17 and 18, 1939, at the offices of the American Medical Association, Chicago, Illinois. Editors of state medical journals as well as secretaries of state medical associations are requested to attend this meeting.

The **Thirty-Third Annual Meeting of the Southern Medical Association** will be held November 21-24, 1939, at Memphis, Tennessee. Hotel reservations may be made by addressing the Hotel Committee, Southern Medical Association, Box 224, Memphis.

The **American Association for Study of Neoplastic Diseases** held a three-day meeting at the Mayflower Hotel, September 7-9. Skin cancer was the special topic under consideration. Dr. Janvier W. Lindsay and Captain Elbert de Coursey participated in the discussion. At the business meeting Dr. Lindsay was reelected treasurer, and Dr. Eugene R. Whitmore was reelected secretary of the Association.

The opening exercises of **George Washington University School of Medicine**, September 25, marked the unveiling of a portrait of the late **Dr. William Alanson White**, for 34 years Superintendent of St. Elizabeths Hospital and Professor of Psychiatry at George Washington University. Dr. Charles Stanley White presented the oil painting to the University in behalf of the medical faculty and it was accepted for the University by Mrs. Joshua Evans, Jr., of the Board of Trustees.

Dean Walter A. Bloedorn welcomed new and returning students and faculty members. Dr. Winfred Overholser, Superintendent of St. Elizabeths Hospital, successor to Dr. White, gave the annual school address on the subject, "The Broadening Horizons of Medicine."

Following the exercises Dr. Bloedorn entertained at luncheon at the Army Navy Club those who participated in the exercises and other guests as follows:

Dr. Luther H. Reichelderfer, Dr. Walter R. Tuckerman, Capt. Chester Wells, Mr. Joshua Evans, Jr., Mr. Henry Parsons Erwin, Admiral Ross T. McIntire, Dr. Thomas Parran, Maj. Gen. J. C. Magee, Dr. George C. Ruhland,

Admiral P. S. Rossiter, Dr. Edgar A. Bocock, Lt. Col. George Dunham, Dr. L. R. Thompson, Mr. Theodore Wiprud, Dr. Rolla E. Dyer, Maj. Gen. H. S. Cumming, Maj. Gen. M. W. Ireland, Col. Joseph F. Siler, Admiral E. R. Stitt, the Rev. Dr. U. G. B. Pierce, Dr. Leland W. Parr, Dr. Joseph H. Roe, Dr. Charles A. Simpson, Dr. Edward B. Vedder, Col. S. J. Turnbull, Dr. Walter Freeman, Dr. Howard F. Kane, Dr. William T. Davis, Dr. W. B. Mason, Dr. Roger M. Choisser, Dr. Harry H. Donnally, Dr. Daniel L. Borden, Dr. Harry F. Dowling, Dr. Paul F. Dickens, Dr. George B. Roth, Dr. Errett C. Albritton, Dr. F. A. Reuter, Dr. C. R. L. Halley, Dr. Chester E. Leese, Dr. Radford Brown, Dr. F. A. Hornaday, Dr. Ernest Sheppard, Dr. J. W. Watts and Dr. John E. Lind.

The **Committee on Public Relations** announces that the time of the radio broadcasts of The Medical Society of the District of Columbia over WMAL has been changed from Wednesday at 10:45 a.m. to Tuesday at 12 noon. October 3 was the sixth anniversary of the Society's radio broadcasts. Dr. John H. Lyons, President of the Society, appeared on a special program prepared for that occasion.

The **Committee on Intern Education of the Children's Hospital** announces that the weekly clinical conferences will be held on Sunday mornings at 11:00 a.m. until further notice. All Chief Attending Physicians are requested to attend if possible and all associate physicians on the Staff and Dispensary services are cordially invited to attend.

A group of ten **British obstetricians and gynecologists**, five of them with their wives, were the guests of the American Obstetrical Travel Club during their visit to this country and Canada. Their purpose in coming was to study American progress in the field of obstetrics and gynecology, and their itinerary included Montreal, Toronto, Ann Arbor, Chicago, Washington, Baltimore, Philadelphia, New York and Boston.

Members of the party included the following: Mr. Louis Rivett of London, Head of the Department of Obstetrics and Gynecology of Middlesex Hospital and Medical School; Mr. Leslie Williams of St. Mary's Hospital and Medical School and the Samaritan Hospital, London; Mr. Theodore Houltaim of Edinburgh, Scotland, Head of the Department of Obstetrics and Gynecology of the Royal Infirmary; and Mr. John Sturrock, also from the Royal Infirmary.

During their stay in Washington September 6-8, the group were the guests of Dr. E. W. Titus, local member of the American Obstetrical Travel Club. The visit included a bus trip through the city with stops at public buildings of particular interest and a call on President Roosevelt.

A dinner was arranged by Dr. Titus at the Columbia Country Club, which was attended by 20 local physicians. Dr. Herbert P. Ramsey, President of the Washington Gynecological Society, presided at the dinner. Addresses of welcome were given by Dr. Prentiss Willson and Dr. John H. Lyons, President of The Medical Society of the District of Columbia, to which Mr. Rivett responded. The same evening the ladies were guests of Mrs. Titus at a dinner at the Chevy Chase Country Club.

A special tour of the Army Medical Museum was made with Lieut. Col. James E. Ash, Curator. At the Surgeon General's Library, Col. Harold W. Jones, Librarian, took charge of the tour. Dr. Titus entertained the visiting gentlemen and about 15 local physicians at luncheon at the Cosmos Club. The ladies were entertained with a trip to Annapolis, where a special drill formation was put on by the midshipmen, following which Mrs. Titus was hostess at luncheon at the Gibson Island Club.

In the evening of September 7 Mr. Rivett and Mr. Houltain were interviewed by Dr. John, the Medical Society's Radio Family Doctor, over Station WOL. The visitors gave their impressions of America and told something of their part in the British defense plans, particularly the ARP (air radio precaution).

In New York the visiting group entertained American physicians at dinner at the Hotel Lexington, September 13. Dr. Titus was present from Washington.

**Dr. Daniel H. and Dr. Lauretta Kress** were given a farewell reception by hundreds of friends and patients September 10 at the Washington Sanitarium, Takoma Park, Maryland, in honor of their retirement after 32 years of service on the staff and 45 years of practice. Dr. Robert A. Hare, medical director of the sanitarium, headed the list of speakers who lauded their work.

The Doctors Kress received their medical education at the University of Michigan. For seven

years they conducted a hospital in Sydney, Australia, returning to this country to take charge of the Washington Sanitarium in 1907, when that institution was built. They are planning to reside in Orlando, Florida.

Dr. Lauretta Kress resigned recently as Associate Member of the Society, having been an Active Member for 20 years and an Associate Member since January 6, 1937. A daughter, Dr. Ora Kress-Mason, has been a practicing physician for 27 years in Murray, Kentucky, and is the wife of Dr. William Mason, head of the William Mason Memorial Hospital. A granddaughter, Ora Patricia Mason, is now studying medicine. The Doctors Kress also have a son, John, and eleven adopted children whom they have reared and educated.

**Dr. and Mrs. Walter Freeman** returned home September 23 on the Swedish liner Drottningholm. Dr. Freeman attended the International Congress of Neurologists at Copenhagen, Denmark. The Congress was disrupted by the War. The British delegation was recalled on August 23 to help plan England's medical defense. However, the German and Polish delegation stayed until the end. Dr. and Mrs. Freeman arrived in Sweden August 27 and stayed there two weeks before securing passage on the Swedish ship. They had made a number of unsuccessful attempts to secure passage on the Athenia and only got on the Drottningholm through the influence of friends.

**Dr. Melvin Isaminger**, Director of the Bureau of Public Health Instruction of the District Health Department, was the principal speaker at the first regular meeting of the District of Columbia Health Forum, September 19. Dr. Isaminger outlined a 12-point plan for improving the health of the District.

**Rear Admiral P. S. Rossiter**, U. S. N., retired, former Surgeon General of the Navy, took office September 19 as the new Chief of Staff at Gallinger Hospital.

**Dr. Harry H. Kerr** addressed the semi-annual meeting of the Medical and Chirurgical Faculty of the State of Maryland September 28 on the subject, "A Solution for Our Medical Economic Problem."



**Dr. Emil J. C. Hildenbrand** addressed the annual meeting of the Eastern Panhandle Medical Association of West Virginia, held at Martinsburg, September 13, on the subject, "Occlusive Peripheral Vascular Emergencies."

**Dr. Malcolm D. Harrison** was appointed Director of the Outpatient Department of Garfield Memorial Hospital to succeed Dr. William Wiley Chase, who resigned July 1. Dr. A. J. Mourot resigned July 30, 1939, as a member of the Junior Associate Staff in Surgery.

The Massachusetts Department of Mental Health has available some copies of a monograph of the third series of "Waverley Researches in the Pathology of the Feeble-minded" for sale at \$1.75 per copy. There are a few of the first and second series left which can be obtained at no charge. Address Secretary of the Commonwealth, State House, Boston, Mass., for the new series and the Department of Mental Health, Room 701, 100 Nashua St., Boston, for the first and second series.

#### BOOKS RECEIVED FOR REVIEW

Acknowledgment is made of the following books which have recently been received for review:

**George Washington University Alumni Directory 1824-1937.** Pp. 366. Washington, D. C.: George Washington University Press, 1938.

**Manual of Urology.** R. M. LeComte, M.D., F.A.C.S., Professor of Urology, Georgetown University School of Medicine; member of the American Urological Association. Ed. 2, completely rewritten. Pp. 295, with 55 illustrations. Price, cloth, \$4.00. Baltimore: Williams & Wilkins Co., 1939.

#### John William Mann, M.D.

(1894-1939)

Dr. John William Mann, an Active Member of The Medical Society of the District of Columbia since January 1938, died suddenly of a heart attack

September 28, 1939, at his home, 1205 Farragut Street, N. W. Dr. Mann had recently returned to practice after a month's leave of absence because of his heart condition.

Dr. Mann was born in Catawissa, Pennsylvania, January 21, 1894, the son of Dr. W. C. Mann, druggist, and Mrs. Lettie D. Mann. He received his medical degree from the University of Pennsylvania in 1917 and then served for nearly two years in the Army Medical Corps as a first lieutenant during the World War. He served for five years as a physician with the United States Veterans' Administration in Philadelphia and entered private practice in Williamsport, Pennsylvania, in 1920. He began his practice in Washington in 1936.

He was a member of the American Medical Association, the E. Coppe Mitchell Lodge of Masons in Philadelphia, the Lions' Club of Washington, and the Hamline Methodist Church.

Surviving are his wife, Mrs. Naomi F. Mann; six children, John W., Jr., James P., Robert U., David L., Jean Carol and Shirley Louise; his mother, Mrs. Lettie D. Mann, all of Washington; and a brother, Dr. Charles E. Mann of Williamsport, Pa.

(Continued from page 295)

2. PACHMAN, D. J.: Hemophilia in Negroes. *J. Pediat.*, 1937, 10, 809.
3. TAYLOR, J. H.: A Case of Haemophilia in a Negro. *J. South Carolina M. A.*, 1923, 19, 665.
4. KUGLEMASS, I. N.: The Diagnosis and Management of Hemophilia in Childhood. *New York State J. Med.*, 1932, 32, 660.
5. Rypins, E. L.: Roentgen Ray as Aid in Diagnosis of Hemophilia. *Am. J. Roentgenol.*, 1934, 31, 597.
6. ROSENBLUM, J.: A Warning against the Use of Arsphenamin in the Treatment of Syphilis in a Hemophiliac. *J. Lab. & Clin. M.*, St. Louis, 1923, 9, 57.

(Continued from page 299)

2. LINDSAY, J. W., RICE, E. C., SELINGER, M. A., AND MISH, K. H.: Diabetic Surgery at Garfield Memorial Hospital from January, 1924, to June, 1936, inclusive. *Virginia M. Monthly*, 1937, 64, 507.
3. RABINOVITZ, B., AND WEISMAN, J.: Two years of Diabetic Surgery. *New England J. Med.*, 1938, 219, 423.



# MEDICAL ANNALS

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### THE HISTORY OF BLOOD TRANSFUSION

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Blood as a therapeutic agent is as old as medicine itself. The ancient Egyptian princes used blood baths for gaining new health, and the Romans frequently followed the custom of drinking the fresh blood of victims dying in the arena.<sup>1</sup> Many races, such as the Hebrews, Syrians, Egyptians, Greeks, and Romans, are supposed to have practiced transfusions. However, the first definite reference to the actual transfusion of blood from one individual to another was that performed by a Jewish physician on Pope Innocent VIII in the year 1492. As the story goes, the Pope had an apoplectic stroke the year before, and in an attempt to increase the vitality of the weakened and failing Pope this doctor passed blood from the veins of the old Pontiff to that of a youth, and the blood of the youth into the Pope. This was attempted with three youthful donors but both they and the Pontiff died. Various writers do not believe that this was an actual transfusion but rather the administration of blood as a draught. Andreas Libavius, a chemist of Halle, is credited with the first detailed description of a blood transfusion. There is much doubt surrounding references to transfusions previous to the year 1616, since such references all antedate

the discovery of the circulation of blood by Harvey. Following this, the medical world began experiments in the use of infusions and transfusions. This stimulus is seen in the work of Francesco Falli, a Florentine physician, who, on August 13, 1654, in the presence of the Grand Duke Frederick II, performed a transfusion using a silver tube in the donor and a cannula of bone in the recipient. After the experience of Falli, Sir Christopher Wren began his work on the injections of various medicaments into dogs. Subsequent to the successes of Wren, Richard Lauer attempted the direct transfusions of blood from one animal to another. His first attempts were unsuccessful, but later, with the aid of Sir E. King, Lauer performed a transfusion successfully. Their achievement spread to other countries and stimulated Jean Baptiste Dennis (1667) to perform a transfusion upon a youth with an obscure fever. After three successful transfusions upon different recipients, Dennis's fourth upon a lunatic ended fatally because of incompatibility in blood types. As a result of this failure, Dennis was arrested and tried; subsequently a decree was passed by the French Parliament specifically prohibiting this operation. The Roman magistrates fol-

lowed the Parisian courts and forbade transfusions from animal to man.

After this period there was a lull in transfusion activities which continued until the early nineteenth century. Of particular interest during this time were the thoughts and speculations regarding transfusions and their indications. Although little or no consideration was given to the use of this procedure in the acute loss of blood, it was the possible mental effects that appealed most strongly to the imaginations and interests of these early investigators.

In 1818, James Blundell, the London physiologist and obstetrician, directed his work to the development of a technic of replacing the blood of women exsanguinated by puerperal hemorrhage. He studied the efficacy of blood transferred through a syringe from one animal to another, and he showed that it lost none of its vital properties and that venous blood was as satisfactory as arterial blood. His apparatus consisted of a two-way tap connected to a syringe by means of which the blood was injected through a tube and cannula into the recipient. This apparatus was named "Blundell's Impeller," and with it he saved the lives of three women in whom death seemed imminent from postpartum hemorrhage.

During this period all workers were handicapped by complications resulting from blood coagulation and type incompatibility. In 1835 Bischoof was the first to attempt to overcome coagulation by using defibrinated blood. Innumerable complicated and ingenious instruments were designed to perform transfusions on the basis of this principle. Larson (1847) performed the first transfusion with defibrinated blood. In a complete summary of all transfusions up to 1875, Landois found that there had been 347 human transfusions and 129 cases in which animals' blood was used. However, the high percentage of severe reactions and the numerous fatalities had branded the procedure as being both dangerous and of questionable value, thus placing it in disrepute.

The greatest achievement and most important

discovery in the history of blood transfusions was the independent work in 1900 of both the Austrian, Landstienner, and the Englishman, Shattuck, who demonstrated the presence of isoagglutinating and isoagglutinable substances in human blood. In the following year Landstienner<sup>2</sup> divided blood into three groups according to its agglutinating reactions. A fourth group was added by Decastello and Sturli in 1902. Jansky (1907) determined the reciprocal agglutinating reactions of the four groups, and three years later Moss independently confirmed Jansky's findings.

With the solution of the problem of agglutination, coagulation remained as the only obstacle to simple and safe transfusions. The developments following the year 1910 were chiefly directed toward preventing this complication. Three directions were taken:

1. Confining the transfer of the blood to intima-lined channels, effecting an arterio-venous anastomosis between donor and recipient (direct transfusion).
2. Very rapid transfer from donor to recipient.
3. The addition of anticoagulants.

The first conception was put into practice by Alexis Carrell in 1905. He developed the technic of blood vessel anastomosis. Unfortunately, this procedure was a formidable one requiring considerable delicacy of technic and was soon replaced by Criles' cannula method (1907). Here the vein of the recipient was threaded, turned back as a cuff and tied in a groove on the outer side of a small cannula. The artery of the donor was drawn over the cuffed part of the vein and ligatured in place, completing intimal contact. Like the preceding method, this was impractical because the artery of the donor was sacrificed and the amount of blood transfused could not be determined.

The principle that the coagulation of blood is delayed when received in a vaseline- or paraffin-coated vessel prompted Brewer and Liggett to use paraffin-coated glass tubes for direct transfusion. One end of such a tube was inserted into the donor's artery and the other into the

recipient's vein. This technic was the precursor of the use of paraffin-lined containers by Curtis and Davis (1911). Their tube had two outlets at one end for the donor and recipient, respectively; the other end was connected to a syringe. This same principle was utilized by Kempton and Brown two years later. The Kempton-Brown tube consists of a glass cylinder with a perpendicular side tube immediately below its upper end, with the bottom of the tube drawn out into an S-shaped cannula.

The prevention of coagulation by means of the rapid transfer of blood from donor to recipient was used by Lindeman in his multiple-syringe method. This method has never become very popular because it is inherently cumbersome and necessitates coordinated action by a skillful team of assistants. Its use was preliminary to the introduction of the syringe-valve apparatuses. Among the earliest of syringe-valve apparatuses were those of Freund, Unger, Bernheim, Kirsh and Miller. The essential design of these instruments is a stop-cock which alternately connects a syringe for blood and saline to the recipient.

The effect of anticoagulants was next studied by workers in an effort to simplify transfusions. Sodium phosphate used by Braxton Hicks was soon discarded because of its harmful effects. Later Landstiener suggested the use of hirudin which was so applied by Satterlee and Hooker (1914). The latter was also discarded because of toxicity. One of the most important contributions to anticoagulants was that of Hustin of Belgium (1914) in his description of experimental methods of indirect blood transfusions using a glucose-sodium-citrate solution.

On November 14, 1914, in Buenos Aires, Agote performed the first transfusion using citrate alone. The following year, Lewisohn and Weil independently perfected this technic and standardized the doses of citrate. This simple and practical method has become the most popular and most used today. Lewisohn's original report<sup>3</sup> may be outlined briefly as follows: Through a comparatively large cannula

inserted into the donor's vein, the blood is permitted to flow rapidly into a glass jar containing an amount of 1 per cent sodium citrate solution required to make an approximately 0.2 per cent solution in the anticipated volume of blood. During the flow, the blood and citrate are carefully and thoroughly mixed by gentle stirring with a glass rod. The citrated blood is poured into an ordinary glass flask from which it flows by gravity through a section of rubber tubing into a cannula inserted in the vein of the recipient. Innumerable modifications of the Lewisohn technic have been suggested in an attempt to exclude the blood from contact with the air and thus avoid possible bacterial contamination or changes which might occur in the blood when so exposed. Though these modifications have practical significance, as a rule they merely have complicated the procedure and have now been discarded in favor of the original simple method.<sup>4</sup>

The idea of preparing blood in advance for transfusion was originally related by Dr. Sautougin.<sup>5</sup> In his dissertation in 1865 he wrote, "In large obstetrical institutions and in ambulance stations during war, it is possible to have on hand a supply of blood." In his opinion, "such blood might be utilized for transfusions during a period of a week, if only there were facilities to store blood at a temperature of 0° centigrade." Sautougin performed several animal experiments and showed that blood stored outside the body for periods of three to seven days gave favorable results when used for transfusion. A similar experiment was performed by Panum in 1862. The next report concerning preserved blood did not appear until 1873, at which time Cornu investigated the possible chemical and physical changes occurring in blood preserved outside the body. He found that defibrinated blood could be stored satisfactorily for four or five days. Similar work was done by Landois in 1875. Some fifty years later, after citrate had been used for the stabilization of blood, Weil (1914-1916) performed transfusions with four-day-old citrated blood.



A more exhaustive experimental investigation on the conservation of blood was made in 1916 by Rous and Turner<sup>6</sup> at the Rockefeller Institute. They found it possible to conserve erythrocytes suitable for transfusion for as long as four weeks, using a glucose-citrate medium. In the latter part of 1917 Hindin reported the successful use of seven-day-old citrated blood. A few months later Robertson<sup>7</sup> described 22 cases in which transfusions varying in amounts from 500 to 1,000 c.c. of blood stored from ten to sixteen days had been given to the Anglo-American Expeditionary Forces without any grave complications. During the same year Gray also reported the use of conserved citrated blood. The many needs for blood during the World War served as an incentive to Kaynes. He prepared supplies of citrated blood several hours before a battle with the purpose of using this entire supply during the several hours following the conflict.

During the years following the War there appeared very little progress in the investigation and use of conserved blood. In 1921 Murenberg described a method of conserving blood by saturating it with oxygen. He stored his blood as long as four weeks. Timofev investigated in vitro the Rous and Turner method of blood conservation and found that blood could be stored for four weeks under such conditions. However, it was not until 1930 that a comprehensive study of the subject was begun in the U. S. S. R. Following the clinical researches of Belenky in this year, blood conservation was further studied in the Central Institute of Blood Transfusion in Moscow. In 1934 Tenconi and Palaco (Argentina) began their study of the practical utilization of conserved blood and published a report of 41 cases. At the same time Jeanneney and Viero<sup>8</sup> in Bordeaux reported their successes. They used blood varying from five to twenty days of age in 70 cases and enthusiastically approved its use. Many transfusions of conserved blood were reported in the Soviet Union from 1932 to 1936.

Shamov<sup>9</sup> in August 1937 reported the trans-

fusion of cadaver blood in 42 cases. He found that transfusions of such blood occasionally gave even better results than blood from live donors. Another observation by Shamov showed that in some cases no anticoagulant was needed and he gave the blood as obtained. Further studies revealed a relatively greater increase of hemoglobin and red cells in the patient after transfusion with cadaver blood. Yudin<sup>10</sup> reported his results with 1,000 transfusions of stored cadaver blood in August 1937. He found the latter to have the same therapeutic effects as the blood of living donors.

Bernard Fantus<sup>11</sup> of the Cook County Hospital was the first American to discuss the use of refrigerated blood. In his preliminary report (1937) he described the purpose and method of conducting a blood bank.<sup>12</sup> A more complete description of the blood bank at the Cook County Hospital appeared in *The Journal of the American Medical Association* in July 1938. In this article Fantus described very thoroughly the methods of obtaining, preserving and dispensing blood by a bank at the Cook County Hospital. Since the establishment of this blood depository, the first in the United States, many hospitals have organized similar departments.<sup>13</sup> The use of conserved blood is now on trial, and its place in medical practice will probably be determined in the very near future.

#### BIBLIOGRAPHY

1. DEBAKEY, M., AND HONOLD, E.: *Internat. M. Digest*, 1938, 33, 301.
2. LATTES, L.: *Individuality of the Blood in Biology and in Clinical and Forensic Medicine*. New York and London, Oxford, 1932.
3. LEWISOHN, R.: *Ann. Surg.*, 1937, 105, 602.
4. LEWISOHN, R.: *J. A. M. A.*, 1938, 111, 959.
5. FILATOV, A. N.: *Vestnik Khir.*, 1937, 51, 194.
6. ROUS, P., AND TURNER, J. R.: *J. Exper. M.*, 1916, 23, 219.
7. ROBERTSON, O. H.: *Brit. M. J.*, 1918, 1, 691.
8. JEANNENEY, G., AND VIEROZ, J.: *Bull. et mem. Soc. nat. de chir.*, 1934, 60, 1305.
9. SHAMOV, V. N.: *Lancet*, 1937, 2, 306.
10. YUDIN, S. S.: *Ibid.*, 1937, 2, 361.
11. FANTUS, B.: *J. A. M. A.*, 1937, 109, 128.
12. FANTUS, B.: *Ibid.*, 1938, 111, 317.
13. CAMERON, C. S., AND FERGUSON, L. K.: *Surgery*, 1939, 5, 237.

# ROCKY MOUNTAIN SPOTTED FEVER (TICK FEVER)

## REPORT OF FOUR CASES

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Because of the increasing incidence of Rocky Mountain spotted fever in Washington, D. C., and its immediate outlying districts, a brief resumé of the knowledge concerning it would appear to be appropriate at this time. The disease, commonly known as tick fever, is an acute infectious disease caused by a virus-like organism, *Dermacentroxenus rickettsi*, which is transmitted by a tick bite. It is characterized clinically by an acute onset with chills and fever ranging between 102 F. and 105 F., severe headache, restlessness, delirium and a characteristic hemorrhagic rash. Pathologically, it is manifested by lesions in the smaller blood vessels where one first notices proliferation of the endothelial lining followed by necrosis of the endothelium and smooth muscle of the media, which causes the rash. Later phlebitis, thrombosis and gangrene result affecting mainly the scrotum, prepuce, vulva and buttocks.

In 1902 L. B. Wilson and W. M. Chowning<sup>1</sup> suggested a wood tick as the transmitting agent and that an animal reservoir existed somewhere in nature. In 1906 H. T. Ricketts<sup>2</sup> demonstrated the presence of infected ticks in nature and the hereditary passage of the virus from one generation of ticks to the next. In 1908 L. P. McColla<sup>3</sup> published the results of an experiment in 1905 when he removed a tick from an infected patient and produced the disease in two volunteers by allowing the tick to feed on them. In 1911 M. B. Maver<sup>4</sup> suggested that the American dog tick, *Dermacentor variabilis*, could cause Rocky Mountain spotted fever.

The present accepted etiologic agent is *Dermacentroxenus rickettsi*, which Wolbach in 1916 first definitely associated with the disease and which he described in 1919.

From the result of field observations in 1917, L. F. Badger demonstrated in 1923 that the rabbit tick, *Haemaphysalis leporispalustris*-

*Pack*, was a carrier when he secured infected rabbit ticks and experimentally transmitted the disease. The third tick indicated as a natural carrier was *Dermacentor variabilis* which Ricketts<sup>2</sup> experimented with in 1911, but it remained for Rumreich, Dyer and Badger<sup>5</sup> in 1931 to demonstrate its complicity. This came as a result of their study on endemic typhus in the East and South of the United States.

Of the above mentioned ticks we know that the wood tick, *Dermacentor andersoni*, is the transmitting agent of Rocky Mountain spotted fever in the West, while the American dog tick, *D. variabilis*, is responsible for the disease in the East.

The known characteristics of *Dermacentroxenus rickettsi* seem to indicate that it is a microörganism intermediate between a bacterium and a filtrable virus. It is a gram-negative bacillus which stains very poorly and has not been cultivated, other than in vivo, when it can be fairly well demonstrated with Giemsa stain.

The virus is contained within a tick which goes through several stages in its life cycle. In the case of *D. variabilis*, the adult female after feeding on a host becomes engorged, falls to the ground and lays the eggs, which develop into 6-legged larvae. They in turn develop into 8-legged nymphs, following feedings with resulting engorgement. These nymphs then grow to adulthood, which is the end of the process.

In nature, it is probably unusual for a tick to attach to more than one host in each feeding stage of the cycle. Hence to perpetuate the disease the virus must be present in one stage, retained and transmitted in a later stage. The time interval for each cycle varies with the environment, susceptibility of the host and the stage of the season. On the average the entire

cycle takes about two years. The virus present in every stage may be latent, and only by feeding and engorgement for several hours does it become reactivated. As summer approaches, the increased temperature and humidity of the environment aid in this reactivation. Biting a host then need not be necessary to infect, for it has been shown that crushing an infected tick removed from animals or the human body can transmit the causative agent.

In the United States, Rocky Mountain spotted fever is endemic in 39 of the 48 states, being more prevalent in the northern Rocky Mountain region and parts of North Carolina, Virginia and Maryland. Since 1931 cases have been reported from 26 of the central and eastern states.

Most cases occur in individuals engaged in outdoor activities, mainly farming, forestry and cattle herding. With the migration of city workers to rural homes the tendency to infect urban workers is on the increase.

The age and sex incidence depends both on occupation and the proximity of living quarters to the tick areas. Seasonal incidence is definite, mainly late spring and early summer. In the East the incidence is greatest during the summer months, the season for maximum activity of the American dog tick.

Clinically, one may classify a case as mild, abortive, severe and fulminating. The mild or ambulatory cases, as represented by case 1, have an acute onset with malaise and symptoms of grippe. There may be chills with a temperature of 102° to 103°F. In three or four days the fever subsides to 100°–101°F. The rash is evanescent and the patient is rarely toxic. Residual symptoms of low grade fever and malaise insufficient to necessitate bed rest may last two weeks.

Abortive attacks are similar in onset to the mild form. The course is of shorter duration and recovery is complete in about a week. Such attacks are often found in those who have received vaccine prophylaxis.

The mild and abortive cases are the exception.

The average case is quite stormy in course, beginning acutely with a chill, sweating, severe headache, muscular aches and pains, and a fever of 103° to 105°F. The patient is extremely toxic and apprehensive with the face assuming a characteristic dusky hue. Gastrointestinal symptoms as anorexia, belching, abdominal distension and vomiting are common, with hiccoughing frequently occurring as a complication.

Neurologic manifestations exist, such as neuritis, restlessness, insomnia, and generalized convulsions or localized areas of spasticity. Stupor is common, and with recovery a retrograde amnesia is present. Objectively, few signs are present, mainly a suggestive Babinski, slight neck rigidity and hyperesthetic response to stimuli.

Respiratory symptoms vary, the rate being elevated in proportion to the toxicity. A dry hacking cough, quite bothersome and independent of a pneumonitis, is common. The temperature is most commonly of the continuous type, beginning at 103° to 104°F. It may rise to 107°F., but in the main it remains between 103° to 105°F., with morning remissions of 1° to 3°F. The fever may continue for two or three weeks and then recedes by lysis in three or four days. This is especially true of the eastern type of the disease. The pulse at first may be out of proportion to the fever, but it rises gradually to 120–130.

A characteristic rash appears between the second and sixth days. At first it is macular, pale to bright red and of a mottled appearance, disappearing on pressure. It first appears on the wrists and ankles, then spreads to the arms and legs and becomes generalized with the abdomen and face less involved. Gradually the lesions become darker and smaller and fail to disappear on pressure. Eventually they break down and become necrotic. Various degrees of the skin lesion are seen. The rash may be evanescent, may appear in successive crops, or may last two or three weeks with desquamation resulting.



The prognosis varies with the individual patient, and the presence or absence of complications are modifying factors. The older the patient the more likely for complications to occur, bronchopneumonia being the most common. The shorter the incubation period, which varies from 4 to 9 days, the more severe the infection and the graver the prognosis. High fever with correspondingly high pulse and respiratory rates indicates an unfavorable outlook. The more pale and mottled the rash and the less hemorrhagic, the better the prognosis. Successive crops of the rash offer a better prognosis. The presence of complications, mainly pneumonia, phlebitis, hemorrhage from the nose, intestines and kidneys, is always an unfavorable prognostic sign.

Sequelae are common with mentality being less acute and normal vigor impaired. Deafness and impaired vision are uncommon.

The mortality rate varies in different localities, depending upon vaccination and the methods of treatment. In general, an average mortality of 25 per cent occurs.

The treatment resolves itself into a prophylactic one which is quite important and consists mainly of proper wearing apparel in infected areas, inspection of clothes and body on change of attire, and the painting of bitten areas with some cauterizing agent. In the East de-ticking of dogs about the premises may be helpful.

Vaccination is of definite value, reducing the incidence of infection in many areas and in the case of fulminating infections lessening the severity of the course. Since there are less than 1,000 cases each year, routine vaccination is not warranted in lieu of the high cost. The vaccine is distributed from the field station at Hamilton, Montana and the National Institute of Public Health at Washington, D. C. Two injections of 2 c.c. at 5-day intervals is the procedure of choice. Yearly vaccinations are desirable in the heavily infected areas because the more often one is vaccinated the higher the titer on succeeding vaccinations.

In treatment the most conservative attack

should be the procedure of choice. The use of antipyretics is to be condoned, and morphine should be avoided in cases in which cerebral edema is pronounced. The use of sulfanilamide and its derivatives has proven of little value. Expert nursing care is desirable, and the patient is made most comfortable by the use of tepid sponging, ice pack to the head, and small frequent doses of a sedative. Bowel elimination by the use of daily enemas is important. Abdominal distension may be relieved by continuous gastric lavage. Fluids should be forced freely, the intake and output being measured. A bland, high calorie diet should be proffered.

The early diagnosis at the present time is difficult and depends mainly upon negative findings, that is, negative blood culture and the absence of any sign of endocarditis, negative agglutination tests for brucellosis and typhoid fever, absence of lung findings and the elimination of a blood dyscrasia.

There are three methods of procedure one may employ in an effort to make a positive diagnosis, the infection test, the virus neutralization test, and the Weil-Felix reaction. Unfortunately, these procedures become positive terminally or when the patient has recovered. The infection test consists of the intraperitoneal injections of 1 to 5 c.c. of whole blood, depending on the severity of the infection, into a guinea pig and observing the development within a week of high fever, scrotal swelling and redness and possible sloughing. At the end of a week the animal is killed; microscopic examination of the tissues reveals the lesions in the blood vessels, and with the Giemsa stain the organism may be identified.

The virus neutralization test<sup>6</sup> consists in the failure to produce the lesions in virus-protected guinea pigs while the control guinea pigs succumb.

The most practical test is the Weil-Felix reaction, but it frequently does not become positive until late in the course of the disease. Too much stress should not be paid to negative findings to exclude the diagnosis, and titers in

less than 1 to 320 dilution should make one skeptical unless over a period of several days the titer gradually increases.

#### REPORT OF CASES

**Case 1.** Mr. J. P. B., 45 years old, was admitted on June 8, 1936, complaining of aching of the body, headache and a rash. On May 17 he had removed a tick from his body. On May 24 he felt tired and developed aches and pains all over his body. These continued for a week during which time he gradually felt worse. The temperature became elevated, reaching 104°F. on one occasion, and a generalized throbbing headache persisted. On June 1 an undescrivable rash appeared over the shin from which the tick was removed. By June 4 a reddish macular eruption, 2 cm. in diameter, was present all over the body. The physical examination revealed a well-developed and well-nourished male who was not acutely ill. The heart and lungs were negative. The only significant finding was a generalized purplish red macular eruption, the lesions being up to 2 cm. in diameter, but were absent on the soles and palms. The temperature dropped from 101° to 99°F., and the pulse rate from 100 to 86, the respiratory rate being normal. No laboratory work was done. The entire stay in the hospital was uneventful. On discharge June 11, the rash appeared to be desquamating and less extensive. The treatment consisted of the use of sedatives, aspirin and a soft diet.

One may classify this case as mild. The incubation period seems to have been 7 days, with the rash appearing on the eighth day of his illness. The latter was quite typical of the disease.

**Case 2.** Dr. D. M., a man aged 63 years, was admitted May 26, 1939. On May 16 he had discovered two ticks on his body which were removed. On May 21 he developed headache, malaise and dizziness. The temperature was 101°F., and a diagnosis of gripe was made. His condition gradually became worse, and the following day he became stuporous. On admission the physical examination revealed an elderly male acutely ill and extremely restless and semi-comatose. A petechial rash was present on the feet and forearms. Except for slight rigidity of the neck the examination was otherwise negative. On May 23 the hemoglobin was 105 per cent, red blood cells numbered 5,120,000, and the white blood cells 11,900, with 26 per cent band forms, 57 per cent segmented cells, 16 per cent lymphocytes, and 1 per cent monocytes. On May 26 the urinalysis showed 2 plus albumen, 1 plus granular casts, 1 plus leukocytes and an occasional red blood cell. The white blood count was

20,000 with 94 per cent segmented cells and 3 per cent monocytes. Widal, brucella and tularemia agglutinations were negative. A blood culture was negative. The illness was characterized by restlessness, stupor and constant hiccoughing. On May 28 the rash was less prominent, but on May 29 it spread over the entire body and was more hemorrhagic. A slight icterus of the skin and sclerae was noticed. The abdomen became distended. The patient died that night. The temperature varied from 102° to 103°F. except for the last two days when it became 104°F. The pulse rate varied from 96 to 116 and then 130 to 140 the last two days. His respiratory rate varied, but terminally it was 40 during the day.

One may classify this as a fulminating case. The incubation period seems to have been 5 days. The rash appeared on the third day of his illness. Icterus as a terminal condition is quite common. Guinea pig inoculations were later reported positive.

**Case 3.** Mr. G. C., a 49-year-old white man, was admitted on August 19, 1939, complaining of chills, fever, weakness, dizziness and a rash on the body. On August 13 he had been bitten on the shoulder by a tick. On August 17 he had a shaking chill and felt feverish and weak. On the eighteenth a generalized rash, more noticeable on the arms and legs, appeared together with considerable pain in the large joints. On admission the temperature was 104°F., the pulse rate 100 and the respiratory rate 28. The patient was well-developed and well-nourished but appeared acutely ill and was quite drowsy. General examination including the heart and lungs was essentially negative except for the skin which showed a generalized macular eruption involving the forearms, thighs and ankles, chest and abdomen. The rash was pink and disappeared on pressure. The temperature fluctuated from 103° to 104°F., reaching 106°F. on one occasion. The pulse rate varied from 100 to 120. The respiratory rate varied from 28 to 40. On August 30 the hemoglobin was 78 per cent, the red blood cells numbered 4,840,000, and the white blood cells 11,700, with 30 per cent juveniles, 43 per cent bands, 10 per cent segments, 1 per cent myelocytes, 10 per cent lymphocytes and 6 per cent monocytes. The patient continued to be drowsy and had generalized muscular aches. The Weil-Felix reaction was negative. The urine showed 2 plus albumin with 2 plus granular casts, and 1 plus red blood cells. On August 22 the patient was more restless and slightly irrational. He developed projectile vomiting. Neurologic examination revealed positive Babinski and Oppenheimer signs on the right. The rash at this



time was more marked on the back and abdomen and less on the extremities. The rash was not present on the palms and soles. On August 23 a generalized convulsion was followed by marked spasticity of the right arm. The patient became comatose and developed pulmonary edema, the neck became rigid and the extremities spastic. He died at the end of day when the rash was more hemorrhagic and present on the palms and soles. Blood injected into guinea pigs was later reported positive.

This case may be classified as of the fulminating type with a short incubation period of 4 days. The rash appeared on the second day of the disease. Central nervous system manifestations were quite marked.

**Case 4.** Mrs. P. S., a woman aged 39 years, was delivered normally of a 7 pound 12 ounce boy on July 21, 1939. The postpartum course was uneventful until July 26, when the temperature rose to 100°F. and gradually climbed to 103°F. By July 29 she complained of malaise and weakness. The pulse rate varied from 90 to 110. On July 30 she developed a dull red, macular rash, at first on the thighs, then on the arms, and finally on the abdomen and thorax. She came from a heavily infested tick area and recalled that on July 12 she was bitten by a tick.

Physical examination revealed the rash; the lungs were negative. There was a systolic murmur at the aortic and mitral areas. The blood pressure was 112/70. The fundus of the uterus was palpable 3 fingerbreadths above the symphysis but was not tender. The remainder of the examination was essentially negative. A diagnosis of puerperal sepsis or Rocky Mountain spotted fever was made. The Weil-Felix reaction was negative. The blood showed 86 per cent hemoglobin, the red blood cells numbered 4,350,000, and the white blood cells 11,100, with 85 per cent segmented forms, 13 per cent lymphocytes and 2 per cent monocytes.

On August 1 the rash became less prominent but appeared on the palms and soles. Anorexia developed, and the patient became quite weak. That evening she had a brief generalized convulsion, following which no neurologic signs were elicited.

On August 2 the temperature was 105°F. and the pulse rate 120. The abdomen became distended. The uterus was halfway between the umbilicus and the pubis. The patient appeared acutely ill. Wassermann and Kahn tests were negative, the hemoglobin was 72 per cent, the red blood cells numbered 3,650,000, and the white blood cells 9,100, with 80 per cent segmented forms, 18 per cent lymphocytes and 2 per cent monocytes.

On August 3 the rash became petechial in character,

especially on the upper extremities. The spleen was barely palpable. The patient was very toxic. The temperature was 105°F., the pulse rate 130, and the respiratory rate 32. There was slight icterus of the sclerae. On August 5 the petechiae were more numerous and the icterus was deeper. The patient was extremely ill. The Van den Bergh test revealed 8.7 mg. of bilirubin and the icterus index was 80.

On August 6 the Weil-Felix reaction was positive in 1 to 80 dilution. The blood platelets numbered 88,000. The patient's condition was critical with edema of the face, numerous facial ticks and spasticity of the right upper extremity. The temperature was 104°F., the pulse rate 130, and the respiratory rate 45.

On August 7 the patient was comatose throughout the day and the icterus was deeper. The Weil-Felix reaction was positive in 1-1280 titer. The blood culture was negative. Shortly after midnight the patient died.

On August 8 the Weil-Felix reaction was positive in a dilution of 1-2560.

This case offered a diagnostic problem, in that at first a puerperal infection could not be definitely ruled out. The incubation period was 18 days, the rash appeared on the second day, and throughout the course of the disease the patient was extremely toxic.

#### SUMMARY

We have presented 4 cases of Rocky Mountain spotted fever with a summary of the present knowledge of the subject. The disease is caused by *Dermocentor rickettsi* through the medium of the bite of ticks, *Dermocentor andersoni* in the West and *D. variabilis* in the East. The clinical picture is quite variable, the average patient being quite toxic, and the disease runs a prolonged course of 10 to 14 days. Considering reports from all parts of the country, the mortality averages 25 per cent, the lowest number occurring in the East. Prophylaxis is our most potent weapon with vaccination proving of definite value. Treatment should be conservative, consisting mainly of expert nursing care in an effort to make the patient as comfortable as possible.

The authors wish to express their appreciation to Dr. N. H. Topping of the National Institute of Health for carrying out the infection tests in guinea pigs.

(Continued on page 343)



## ELECTROCOAGULATION IN OTOLARYNGOLOGY\*

P. S. CONSTANTINOPLE, M.D., F.A.C.S., *Associate Professor of Otolaryngology, Georgetown University School of Medicine*

"Electrocoagulation is a painless, easy, and comparatively quick method of removing tonsils. It is much easier to persuade your patient to have an electro-tonsillectomy performed since it does not involve hospitalization nor loss of any time from work, and, furthermore, no discomfort results from this new operative procedure." I have quoted, as well as I can remember, the words used by the gentleman who first tried to persuade me to acquire one of these indispensable gadgets. As a further inducement, he assured me that I could collect anywhere from \$75 to \$100 from each "victim" since he would have no hospital bill to pay, and I could put down \$5 to \$10 for each treatment. I was quite skeptical of these advantages, particularly since soon after this I had occasion to do tonsillectomy on two patients, both of whom were emphatic in telling me that I must be wrong in advising tonsillectomy because their tonsils had been removed by the electrocoagulation method by osteopaths not very long before. Conversations with others increased my doubts so that I felt certain electrocoagulation was of no value. However, after becoming associated with a colleague who had purchased an apparatus, I was tempted to experiment. Since then, after two years of experience, I have revised my opinion somewhat. This procedure is of definite value in some conditions, and in my opinion the only one to be used in certain others.

The machine used is the Burdick Model D-3. This is equipped with an active electrode-carrier to which may be attached various electrodes designed to attack the tissue best, depending upon its size and position. For small masses, a single point electrode is used, with the indifferent electrode in the hands of the patient. This sears the tissue for an area about 2 mm. in

diameter. For larger masses, a bipolar electrode is used, coagulating between the two poles an area of about 6 mm. in diameter. A great deal of experience is necessary to determine the proper amount to coagulate at each point. It is much better at first or, for that matter, always, to undercoagulate than to attempt too rapid removal by overcoagulation. For anesthesia, I have found most satisfactory 2 per cent pontocaine solution applied to the area until sensation of pain on pricking is lost. Occasionally 10 per cent solution of cocaine hydrochloride or even novocaine may be necessary.

Tonsillectomy is better performed surgically except in cases of poor surgical risk, or in patients who through fear will not submit to an operation. Although the results are never as good as from a proper enucleation, a "half-a-loaf" attitude must be adopted. Even though the tonsil is not completely removed, sterilization of the infected crypts may result from coagulation, giving considerable relief from focal infection. A complete tonsillectomy, to be painless and bloodless, will take six months or more. The interval between treatments varies from 7 to 10 days. Any attempt to hasten the process will cause great pain or discomfort, and small hemorrhages may result from sloughing. Scarring results, and anesthesia becomes more difficult.

Tonsil tags are ideal for this procedure and may be removed in from one to more treatments depending upon size.

Pharyngeal lymphoid tissue responds excellently to this method of treatment. Lateral bands, posterior to the pillars, thickened by repeated infection and acting as the initial point of irritation for pharyngeal infection, are reduced by coagulating several places along the length of the mass. In some cases, colds have been reduced in frequency and severity through the

\* Read before the Section on Ophthalmology and Otolaryngology of the Society, January 20, 1939.

elimination of this focus. Good results have continued through two winters.

For lingual tonsil hypertrophy, in my experience, this method of treatment is by far the safest and easiest. All of us who have seen the rather profuse hemorrhage which follows the surgical removal of an enlarged and infected lingual tonsil, difficult to expose and unsatisfactorily attacked, will find electrocoagulation much simpler and safer. A dozen or more points are coagulated at each treatment. Usually four to five cauterizations suffice to reduce the tissue to its normal size so that it is no longer seen without the use of the laryngeal mirror. I have had severe irritation and complaints of constriction and tenseness at the base of the tongue following surgery. So far, coagulation has caused no unpleasant after-effects.

Since its introduction electrocoagulation has been advised and advocated for all sorts of nasal conditions from polyps on. Not long ago an enthusiastic colleague wrote to Dr. V. R. Alfaro, my associate, of the marvelous results he was getting by cauterizing the inferior turbinates by means of the bipolarelectrode in the case of patients complaining of vague nasal disorders and showing the well-known syndrome of

stuffiness, postnasal discharge, headache, etc. I have tried his methods, but either my technic or my enthusiasm is somewhere at fault. In the cauterization of turbinates and of bleeding areas, I think the actual cautery is still superior. In cases of multiple nevi of the septum, bipolar coagulation seems to control the bleeding better than other methods. These spots are usually from 1 to 3 mm. in diameter and bleed at the slightest touch so that actual cauterization only causes more hemorrhage. With a pole on either side of the nevus, coagulation stops bleeding immediately.

#### CONCLUSIONS

1. Electrocoagulation is a valuable aid in the practice of otolaryngology.
2. It is not recommended for tonsillectomy or for the removal of large tonsil tags, except when excision by surgery cannot be performed.
3. It is ideal for small tonsil tags and lymphoid hypertrophy in the pharynx.
4. It should be the method of choice in surgery of the lingual tonsil.
5. It should be the method of choice in nevi of the nasal septum.

**Device for Easily Changing Position of Patient in Bed Is Described.** A device for changing a patient from one bed-like frame to another without lifting him, thus enabling him to spend a part of each day on his abdomen, is described by Homer Stryker, M.D., Ann Arbor, Mich., in *The Journal of the American Medical Association* for November 4, 1939.

Many patients with certain types of fractures and with spinal tuberculosis must lie on frames instead of beds. Up to now such a patient has been forced to lie on his back because there was no way of turning him without injuring him.

Dr. Stryker's device, which requires the services of only one attendant and may be used with a minimum of discomfort to the patient, has been found satisfactory in the daily care of from fifteen to twenty hospitalized patients.

"If a patient who requires frame care is allowed to remain a part of the day on his abdomen," Dr. Stryker points out, "he is more comfortable and bedsores, respiratory or kidney complications are less likely to develop."

Explaining the method, the author says: "The patient is placed on his back on a frame. This frame is then suspended about 1 foot from the mattress, each end of which is attached

to a turning device which clamps on to the head and foot of the bed. To turn the patient, the anterior (abdominal) frame is placed over him and pressed down firmly, pressing him between the two frames. The anterior frame is then locked in this position. The nurse then releases a spring lock at the end and revolves the two frames, with the patient between them, whereupon the frames automatically lock again, leaving the patient face downward on the anterior frame. Since the patient simply revolves on his long axis without change of the center gravity, little effort is required for the turning. The upper frame (back) is now released and lifted off. While on the anterior frame, the patient's head is supported by an adjustable face piece.

"The patient's eyes are about 15 inches from the mattress, a comfortable distance for reading and writing. The anterior frame is narrowed at the shoulders to allow the arms to be brought down over the sides for comfort.

"In some cases frequent turning may be required, but usually the patient remains on the anterior frame during the day. At night the patient is turned in the same manner to the posterior (back) frame."



# REPORT OF THE SIBLEY MEMORIAL HOSPITAL PREMATURE WARD

JANUARY 1, 1939-JULY 1, 1939

JACOB KOTZ, M.D., F.A.C.S., *Clinical Professor of Obstetrics and Gynecology, George Washington University School of Medicine*; MORTON S. KAUFMAN, M.D., AND  
MILTON M. GREENBERG, M.D., *Washington*

It has been said that the infant mortality rate is an index to the civilization of a people. The two chief causes of death in the first few weeks of life are prematurity and infection. For the past few years, the death rate in newborn infants from infection has been steadily reduced due to the consistent effort of the profession, but the mortality rate from prematurity has been altered very little.

It has been proven in many cities that the mortality rate among premature babies may be appreciably reduced by the use of especially equipped central stations specializing in their care. In Chicago, at Michael Reese Hospital, the mortality has been reduced from 42 per cent to 22 per cent, and 75 per cent of these babies were brought in from homes and other hospitals.

No statistics are available on the mortality rate of premature infants in the District, but we have reason to believe that it is well over 50 per cent. Prompt transportation, maintenance of body temperature, and careful nursing care should appreciably diminish the number of babies who die of prematurity.

It was with these facts in mind that the Premature Station of Sibley Hospital was established.

The premature ward of Sibley Memorial Hospital has now been in operation for six months and we herewith submit a preliminary report of its management and results. The ward was presented to the Hospital by the Variety Club of Washington for the use of any doctor in the District or vicinity, and the hospital has made every effort to coöperate with the physicians by allowing them complete control of their own cases, and establishing a scale of fees that can be adjusted to the economic status of any patient, even the indigent.

The ward is equipped with 10 of the newest type Castle Humidicribs with automatic ac-

curate control of temperature, humidity and oxygen supply. All of the necessary accessories for the care of prematures, such as a heated dressing table, an ultra-violet lamp, electric refrigerator, sterilizers and feeding equipment have been supplied. A portable incubator is available for the transportation of prematures to the ward from any hospital or home in the vicinity.

The nursing supervisor has been given special training at the premature ward for the City of Chicago, located at Michael Reese Hospital, under the supervision of Dr. J. Hess, and the plan of management there has been adopted. For complete details of the plan of management and feeding, the reader is referred to an article by Evelyn C. Lundeen, R. N., Supervisor of the Michael Reese Premature Station, in the *American Journal of Nursing*, 1939, volume 39, pages 596-604.

The hospital has recently been licensed by the Borden Company to use the new quick freezing process for the preservation of breast milk that has been used so effectively at Boston Floating Hospital, so that an adequate supply is always available, either for use in the ward or for distribution to the profession. The milk is frozen in disc form by carbon dioxide snow and preserved in a special icebox at  $-10^{\circ}\text{F}$ . in glass jars. The discs may be melted and used at any time. The hospital will soon be in a position to supply this milk to anyone for a small fee.

During the period from January 1, 1938 to July 1, 1939, 37 premature infants were admitted to the ward. Of these, 27 were born at Sibley Hospital and 10 were brought in from other hospitals or homes. Table 1 shows the mortality rate in the various weight groups and the mortality in the entire group. The mortality figure 14.8 per cent for those babies born at Sibley compares very favorably with the mor-



tality of 35 per cent for prematures for the two years prior to 1939.

In the group of 10 babies brought in to the ward from outside, there were 6 deaths, a mortality rate of 60 per cent. This figure reflects two facts: First, only those babies in poor condition were sent in from other hospitals, and second, there is an urgent need for immediate transportation in a controlled environment. The portable incubator with its controlled

temperature and oxygen supply is essential in the transportation. A small drop in the body temperature of the premature infant will probably result in death.

Table 2 illustrates the average length of stay in the various weight groups and the average gain in weight during that stay. All of the living babies were discharged in good condition.

At only one time has the ward been full to capacity, and even then it would have been possible to graduate some of the larger babies to the regular nursery to make room for new premature infants.

We feel that the capacity of the ward is sufficient to care for the majority of the white prematures born in this vicinity, and that the premature baby has a far better chance for life in this highly efficient station specializing in their care.

#### SUMMARY

1. Thirty-seven premature babies have been admitted to the Sibley Memorial Hospital Premature Ward in the first six months of its operation.

2. The mortality among premature babies born at Sibley Memorial Hospital has dropped from 35 per cent to 14.8 per cent since the installation of the ward.

3. Ten babies from outside have been treated, of whom 6 expired, a mortality of 60 per cent.

4. We urge immediate transportation of all prematures born in the District and vicinity to the ward in the controlled environment of the portable incubator.

TABLE 1

| WEIGHT      | BORN AT SIBLEY MEMORIAL HOSPITAL |        |          | BORN ELSEWHERE |        |          | TOTAL MORTALITY |
|-------------|----------------------------------|--------|----------|----------------|--------|----------|-----------------|
|             | Number                           | Deaths | Per cent | Number         | Deaths | Per cent |                 |
| <i>lbs.</i> |                                  |        |          |                |        |          | <i>per cent</i> |
| 1-2         | 1                                | 1      | 100      | 2              | 2      | 100      | 100             |
| 2-3         | 5*                               | 2      | 40       | 3              | 2      | 66       | 50              |
| 3-4         | 6                                | 0      | 0        | 4              | 2      | 50       | 20              |
| 4-5         | 15                               | 1      | 6.6      | 1              | 0      | 0        | 6.2             |
| Total...    | 27                               | 4      | 14.8     | 10             | 6      | 60       | 27.0            |

TABLE 2

| WEIGHT      | NUMBER OF CASES | LENGTH OF STAY | AVERAGE GAIN  | AVERAGE WEIGHT ON DISCHARGE |
|-------------|-----------------|----------------|---------------|-----------------------------|
| <i>lbs.</i> |                 |                |               |                             |
| 1-2         | 0               | 0              | 0             | 0                           |
| 2-3         | 4*              | 59.5           | 3 lbs. 6½ oz. | 5 lbs. 12 oz.               |
| 3-4         | 8               | 49             | 2 lbs. 12 oz. | 6 lbs. 5 oz.                |
| 4-5         | 15              | 21.8           | 15½ oz.       | 5 lbs. 9 oz.                |
| Total.....  | 27              |                |               |                             |

\* Two babies, one weighing 2 pounds ½ ounce and the other weighing 2 pounds 7½ ounces at birth, were admitted before July 1 but had not been discharged at the time of preparation. They have been in the ward 23 and 33 days, respectively.

**Recognizing Late Congenital Syphilis.** A method for recognizing certain eye symptoms in late congenital syphilis, important as a means of distinguishing this condition in adults from the early stages of acquired syphilis, is discussed by Joseph V. Klauder, M.D., and Alfred Cowan, M.D., Philadelphia, in *The Journal of the American Medical Association* for October 28, 1939.

The method makes use of slit lamp microscopy in detecting interstitial keratitis (inflammation of the cornea with opaque deposits in its depth), a condition which affects between 25 and 50 per cent of persons with congenital syphilis and which occurs before the age of 15. The authors point out that "with the corneal microscope and slit lamp a diag-

nosis of old interstitial keratitis can invariably be made, regardless of the age of the patient. We believe that the importance of slit lamp examination in clinical syphilology has not been sufficiently emphasized. The changes observed may be the only evidence of congenital syphilis. Their presence in adults and old patients may explain the absence of a history of infection, and they may serve as a means of interpreting positive or weakly positive results of Wassermann or other syphilis tests. In the presence of other signs of syphilis a diagnosis of old interstitial keratitis determines the status of infection—congenital syphilis—and therefore has an important bearing on treatment and the probable end result.?"

## CLINICO-PATHOLOGICAL CONFERENCE

### THE GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

ROGER M. CHOISSEY, M.D., F.A.C.P., *Professor of Pathology*, AND WALTER A. BLOEDORN, M.D., F.A.C.P., *Dean, George Washington University School of Medicine*

#### CASE No. 54230

The following is one of a series of weekly Clinico-pathological Conferences conducted at The George Washington University School of Medicine as part of the regular curriculum.

Abstracts of the cases to be presented are distributed to the members of the faculty and student body in advance of each conference. The final diagnosis is known only to the pathologist.

#### PRESENTATION OF CASE

A 35-year-old white male was first seen on July 7, 1937. Early that evening, while sitting in the movies, the patient was suddenly seized with a severe, sharp stabbing pain in the precordial area, which radiated to the left axilla. The pain was aggravated by breathing and by change in position. A dry cough was also noted. There had been no hemoptysis or weight loss. He had been in China from 1931 to 1935, and while there had had paratyphoid followed by dysentery, which was thought to be amebic in origin but was never proved to be so. In 1932 he suffered from "heavy colds" and was treated for bronchiectasis. He spent some time in Minnesota visiting grain elevators. Review of the systems was generally negative. He said he had hemorrhoids which "gave him some trouble."

He was a tall, well-developed man, holding his left chest to prevent pain. The pulse rate was 96 and the blood pressure 110/80. The temperature was normal. There were numerous carious teeth. The chest showed no abnormalities. The heart was not enlarged. There were no murmurs and the rhythm was regular. The abdomen was flat and no masses or organs were felt; there was no tenderness. Rectal examination revealed a few external hemorrhoids; the prostate was not enlarged. The fingernails were convex but not definitely clubbed. The remainder of the physical examination was negative. The chest was strapped with some relief of symptoms. When the patient was seen again, on August 20, the pain was still present although less severe. Examination at this time showed a "suggestion of a friction rub" at the apex of the heart, synchronous with the respirations. On November 19 the chest pain was less severe and he was complaining of pain on defecation. Consultation at this time disclosed a "deep anal

ulcer in the posterior commissure, with induration and granulation." Internal and external hemorrhoids were also present. The ulcer was excised under local anesthesia. An X-ray film of the chest taken on this date showed increased hilar markings but nothing else. An electrocardiogram at this time was also normal. About February 1938 the patient was seen by a consultant, who made a diagnosis of tuberculosis. The tuberculin test was positive (1:10,000 O.T.). Examination on March 2, 1938 showed tenderness and a few râles at the left base. X-ray examination at this time showed a diffuse, "flaky" infiltration of both lung fields, more especially at the bases. Cultures were made of the sputum but no pathogenic organisms were found. A lymph-node in the left axilla had become palpable. Biopsy was done and reported essentially normal. About this time a fistula-in-ano was found and operation performed. The lung condition was suspected of being a fungus infection, and he was given saturated solution of potassium iodide 60 minims t.i.d. He developed iodism and the drug was stopped. On April 3, 1938, he had no fever, had not lost weight, and had no cough, dyspnea or expectoration, but pain was still present in the chest. Complete physical examination revealed nothing except occasional râles at the bases of the lungs and a "to and fro scratchy murmur at the apex." X-ray film of the lungs at this time showed "both lung fields, especially the lower portions, diffusely infiltrated with multiple spotted areas having a soft appearance." Bronchoscopic examination showed only slight reddening of the mucosa. An aspergillus was cultured from the sputum twice, but this was suspected of being a contaminant. Skin tests for the aspergillus were negative.

Additional laboratory examinations were as follows: The Wassermann test was negative. The stool and urine were normal. Direct sputum examinations and sputum cultures were negative for tubercle bacilli. Guinea pig inoculation was negative for tuberculosis. The leukocytes varied from 7,000 to 11,000, with a normal differential (eosinophiles 3 per cent). The sedimentation rate was 30 mm. in 1 hour in April 1938, later 7 mm.

In July 1938 a sputum culture was again tried and an "unidentified mould" was found. Thymol medication was tried with no results. The patient was gradually growing weaker and complaining of dyspnea. A low-grade fever was noted. In October 1938 several doses of X-ray therapy were tried with no results. From this

time on his course was progressively downhill. The patient died on February 6, 1939.

#### STUDENT DISCUSSION

STUDENT: It is obvious from the record that the man had a long drawn-out illness of a rather obscure nature. His symptoms were largely pulmonary. The most probable diagnosis seems to me to be some form of mycotic infection. He had travelled widely and could easily have picked up that infection. There is a possibility of pulmonary tuberculosis, but I think that much less likely.

DR. BLOEDORN: How do you explain the sudden onset of symptoms?

STUDENT: His sudden pain could have been a coronary attack, but he was a young man and had no previous cardiac history; furthermore, the blood pressure was not lowered following the attack, as I would expect with coronary thrombosis. It could have been a pericarditis, and the friction rub at the apex of the heart makes this not unlikely. However, I believe that the pain came from involvement of the pleura; it was aggravated by breathing and change of position. When the chest was strapped, the pain was relieved. It appears to me that the first manifestation of the disease was pleurisy.

I favor pulmonary mycosis as the diagnosis for the case. Many smears and cultures of the sputum were taken but apparently no definite conclusions could be drawn from these examinations. Of course, the usual case of mycotic infection responds to iodide treatment. In this case the lack of response may have been due to stopping the use of the drug because of symptoms of iodism, and of course all cases of mycotic infection do not respond to the iodides even in adequate doses.

Pulmonary tuberculosis is a possibility, but the clinical findings are certainly not those of the usual case of tuberculosis. The physical findings were very meager and largely confined to the bases. Even in the later stages there appears to have been no evidences of cavitation. The laboratory studies were quite extensive and

tubercle bacilli were never found. Failure to find the tubercle bacillus, however, does not exclude tuberculosis.

DR. BLOEDORN: Does anyone else have a suggestion?

STUDENT: It seems to me that the whole picture is consistent with mycotic infection. I recently read a case report of such an infection which paralleled this case very closely. There was a previous suspicion of bronchiectasis, but the first symptom was pleuritic pain. The X-ray appearance was quite like the one in this case, and the course was similar. That case responded to iodides.

The presence of the anal ulcer and fistula suggests some granulomatous disease. I think the anal symptoms were probably due to a secondary lesion. Of course, it is taught that pulmonary tuberculosis is frequently associated with fistula-in-ano, but usually the pulmonary disease is active and the sputum positive when anal lesions develop from swallowing tuberculous sputum.

DR. BLOEDORN: Does pulmonary mycosis usually end fatally?

STUDENT: Yes, especially if bronchiectasis or pulmonary abscesses are present.

DR. BLOEDORN: Mycotic infection is not particularly common. Yeasts and fungi are very common in nature, but most of them are not pathogenic. We probably inhale some of these bodies almost all the time.

What arguments do you have against pulmonary tuberculosis? Do you think a person can die of pulmonary tuberculosis and never show tubercle bacilli in the sputum or excreta?

STUDENT: It is possible, I suppose, but not likely. The average case of fatal pulmonary tuberculosis shows a positive sputum for some time before death. In this case, guinea pig inoculations and cultures for the tubercle bacillus were negative. The tuberculin test was only slightly positive.

DR. BLOEDORN: What type of pulmonary tuberculosis might be fatal and never have a positive sputum?



STUDENT: If the infection were primarily or especially of the tracheobronchial or mesenteric lymph-nodes the sputum might never be positive. In miliary tuberculosis of the lungs the sputum is frequently negative, but the course of miliary tuberculosis between onset of symptoms and death is usually much shorter than the 18 months this man lived. Most cases die between two and three months.

DR. BLOEDORN: Who else would like to contribute something to the discussion?

STUDENT: I think mycotic infection is the best bet on the basis of the history, physical examination and course. I do not believe tuberculosis would have caused such prolonged symptoms without causing fever.

DR. BLOEDORN: How about the sedimentation index? It was 30 in April 1938. Is that consistent with active tuberculosis?

STUDENT: Yes.

DR. BLOEDORN: Here is the first X-ray film of the chest, taken November 30, 1937. It shows a rather small heart. There is no fluid in either pleural cavity. The apices are clear. There is some increase of the usual bronchial markings, especially in the right base. This next film was taken on March 3, 1938. Now you see, only three months after the first picture there is definite infiltration on both sides, particularly in the bases. It is a rather spotty, snowflake-like infiltration. There is still nothing specific about the picture, but there has obviously been some progression of the pulmonary involvement.

On March 29 films of the apices were taken. They appear relatively clear; his trouble at this stage was still largely confined to the bases.

Here is another film taken about two and a half months later, dated June 7, 1938. All lobes of both lungs appear to be affected now, but most of the infiltration is in the lower lobes. The general appearance remains patchy and snowflake-like. Do you still think it is mycosis?

STUDENT: I think pneumoconiosis must also be considered, although the opacities in

the X-ray film appear to be more dense than those usually found in the dust diseases of the lungs.

DR. BLOEDORN: Yes, that must be considered from the X-ray picture. However, the history does not indicate unusual exposure to dust. He was an economic investigator in China and was not a laborer. Does anyone else have a suggestion?

STUDENT: How about infection by a lung fluke? The patient was in China for four years, and I understand lung flukes are not uncommon in China.

DR. BLOEDORN: Most cases of infestation by *Paragonimus westermanni*, or the lung fluke, show hemoptysis and definite pulmonary findings. Furthermore, the ova of the flukes would hardly be missed if the sputum were examined microscopically.

STUDENT: In addition to mycosis, I think we should consider pulmonary amebiasis in this case. While in China he was suspected of having had intestinal amebiasis. Pulmonary lesions could develop due to the *Entamoeba histolytica* being carried to the lungs. This case corresponds somewhat with cases described to us by Dr. Manson-Barr in one of the Smith-Reed-Russell lectures this year.

DR. BLOEDORN: That is, of course, a possibility, but he apparently had no gastrointestinal symptoms for several years. Furthermore, when pulmonary amebiasis develops it is usually secondary to amebic abscess of the liver, and this man had no symptoms of liver abscess.

Dr. Heath, this case was a patient of yours. Would you care to comment?

DR. HEATH: We were never able to identify a fungus from the sputum, even when a specimen taken by the bronchoscope was examined, until after iodides were administered. Our suspicion that this was a case of infection by moulds was strengthened by the fact that the patient told us he was experimenting with moulds. In some instances, I understand that the iodides instead of killing off the moulds stimulate them, and we thought this might be

the explanation for our failure to find fungi in the sputum until after iodide administration.

Several of the consulting physicians who attended this man thought that he had an atypical case of pulmonary tuberculosis, and one even advised him to go to a sanitarium. I advised against this as I did not believe he had tuberculosis.

We felt reasonably sure during the last few months of his illness that we were dealing with a fungus infection of the lungs.

STUDENT: How about a malignancy of the lung? The X-ray appearance is not inconsistent although it is not that of the usual lung cancer. Onset of symptoms by pleural pain in cancer of the lung is not uncommon, and is due to extension of the tumor to the pleura.

If it were a malignant tumor of the lungs it could be either primary or secondary. The widespread, rather diffuse infiltration of both lungs is more in favor of metastatic tumor than primary carcinoma of the lung.

DR. BLOEDORN: Our time is about up and suppose we take a vote.

How many favor mycotic infection of the lungs? (about 60)

How many favor tuberculosis? (about 5)

How many favor malignancy of the lung? (about 20)

How many favor infestation by the lung fluke? (about 8)

It is apparent that there was great difficulty in making a diagnosis in this case. Tuberculosis of the lungs is unlikely because of the distribution of the lesions. Miliary tuberculosis could produce an X-ray picture like this one and a persistently negative sputum but a patient with miliary tuberculosis usually dies in a much shorter time.

Mycotic infection is a strong possibility and I see it has a large following among you, but I believe that a fungus would have been recovered without difficulty before the disease progressed far enough to cause death.

As for malignancy, the X-ray picture suggests secondary rather than a primary lung tumor.

If metastatic, where could the primary tumor be? Usually before death occurs the primary tumor becomes apparent, either by producing symptoms referable to a certain organ, or by becoming palpable. In this case there is no evidence of disease except in the lung, with the possible exception of the rectum. Cancer of the rectum very seldom metastasizes to the lungs.

#### PATHOLOGIC DISCUSSION

DR. CHOISSE: The body was very emaciated and anemic. There was no jaundice, edema or lymphadenopathy. On exposing the viscera, the thoracic and abdominal organs were in their usual positions and no fluid was found in the abdominal or pleural cavities.

Examination of the digestive tract, from esophagus to anus, showed no evidence of neoplasm. The lower colon and rectum were examined with special care because of the symptoms referable to these parts. Whatever had been there previously was completely healed at the time of necropsy, and no evidence of tumor, granulation tissue or scars was found.

The spleen was large, soft and dark brown in color, resembling somewhat a malarial spleen. It showed no evidence of tuberculosis.

The kidneys were of average size and the parenchyma appeared completely normal.

The urinary bladder and prostate showed no pathologic changes.

The liver was slightly larger than average and revealed on its superior surface three or four flat white areas less than 1 cm. in diameter. Except for these lesions the liver appeared normal.

The pancreas was normal in size and contour. The head of the pancreas was soft but the body was firm and somewhat fibrous.

There were no adhesions or fluid in the pleural cavities. The lungs were firm and filled with shotty nodules. The hilar lymph-nodes were moderately enlarged and on section showed firm whitish areas. When the lungs were sectioned, nodular areas were noted throughout

both lungs and all lobes. These nodules varied from 0.5 cm. to 2 cm. in diameter. They had a firm, greyish-white periphery and a soft hemorrhagic center. My impression, from the gross examination, was that this was a case of fungus infection and we took cultures from the lesions to verify our suspicion. No growth was obtained. Frozen sections were prepared after the cultures had been taken. These revealed the lesions to be a typical adenocarcinoma.

The above case offered many diagnostic difficulties, not only to the clinicians who were apparently led astray by the recovery of the aspergillus, but also to the pathologists who were compelled to rely on the microscopic examination of the lesion for the final diagnosis. The diffuse, shotty, well-rounded pulmonary lesions, with their raised, firm periphery and soft hemorrhagic centers could well have been the result of a yeast infection.

After our positive diagnosis had been made from the frozen section, the question arose as to whether the tumor was primary in the lung or secondary. A review of all material at hand failed to reveal any neoplastic focus other than the few small nodules in the liver which were considered metastatic. The entire bronchial tree was carefully dissected for areas of ulceration and stenosis, yet nothing of the sort was found.

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**Abdominal Symptoms Often Signify Impending Cancer of Stomach.** That abdominal symptoms are often signals of impending cancer of the stomach is stressed in *The Journal of the American Medical Association* for October 21, 1939, by Alfred Brown, M.D., Omaha, who reports that forty-eight of eighty patients with such a cancer had complained of definite or indefinite abdominal symptoms for from five months to thirty years.

Only seven of the eighty patients presented themselves early enough for operation to be performed.

"A study of the observations in this series of cases," Dr. Brown points out, "raises the question whether the medical treatment of gastric ulcer is justified from the fourth decade of life on. Every patient is entitled to one attempt at medical cure of gastric ulcer. A recurrence of symptoms of ulcer after one medical regimen should raise the question as to the

Arguments in favor of the tumor being secondary may be summarized as follows: First, there was diffuse bilateral distribution of the pulmonary lesions; second, the cell type was distinctly adenocarcinomatous; third, the lesions cast well-rounded distinct roentgen shadows. Arguments in favor of primary carcinoma of the lung are: First, no gross lesion was found in any of the organs that might be primary; second, carcinomas, in general, do not metastasize by the blood stream; and third, the clinical history, roentgen findings, cell type and distribution of the lesion are not inconsistent with its primary pulmonary origin.

The usual primary carcinoma of the lung arises from a focus in the bronchial epithelium that can be readily seen; their cells are oat-shaped, and they infiltrate in a fan-like manner from some area near the hilus. The less common forms arise locally or diffusely from the sub-epithelial mucous glands; the cells are adenomatous in arrangement and proliferate either as a diffuse consolidation of the lung resembling lobar pneumonia or as small miliary growths diffusely scattered throughout the lungs.

My opinion is that this case represents the latter variety and is a primary adenocarcinoma of the lung which arose diffusely from the smaller bronchioles. The microscopic sections, as you see, support this contention.

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advisability of surgical exploration. If surgical exploration is carried out and a prepyloric ulcer (one located in front of the lower end of the stomach) is found it should be removed if technically possible in preference to the performance of a palliative drainage operation. We have many specimens of a cancer superimposed on an ulcer. Consequently it still remains a question whether an ulcer remaining in the stomach, even though it gives no symptoms, may not be a source of potential danger.

"Cancer of the stomach sufficiently advanced that a definite diagnosis of it can be made is a condition which is practically incurable by surgical treatment. The wisdom of surgical removal of the various so-called pre-cancerous conditions is now recognized. Gastric ulcer belongs to this group if we are to succeed in the surgical cure of cancer of the stomach."



# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

*Editorial Office, 1718 M Street, N. W.*

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### A DANGEROUS ENEMY

We hear a great deal these days about enthusiastic "left wingers" who would radically alter the present methods of medical practice. Among this group are ardent supporters of compulsory health insurance, Government or privately subsidized medicine and out-and-out State controlled and supervised medical practice. Not a few of these proponents of change are offensively vocal, principally because they are uninformed. Of course, not all of those who favor changes in medical practice are radicals but those who are take advantage of every opportunity to urge their cause. Then, too, there is a small minority group in the profession itself which favors proposals as "radical" as any which have been advanced.

Disturbing as have been the activities of these enemies of the present system of medical care, it is our opinion that they are far less dangerous to the future of medicine than the indifferent medical practitioner. If there were only a few of such practitioners it would not be serious. The difficulty lies in the fact that they constitute a large segment of the profession.

Nothing is as deadly as indifference. Nothing is more difficult to combat. There is at least a chance for accomplishment where there is opposition but what can one do in the face of inertia!

Every medical organization in the United

States today is confronted with this dangerous enemy of the medical profession. The question constantly in the minds of officers of medical organizations is, how can we arouse the majority of physicians from their lethargy; how can we bring them to realize the responsibilities they have not only for the future of medical practice but for the immediate present?

The experience of those who have long been engaged in organization work would seem to indicate that the solution lies in strengthening medical societies by stimulating social relationships between physicians in the community. If doctors get to know each other better, they naturally have more interests in common. Efforts along this line have proved very successful in many communities.

If a catastrophe overtakes the medical profession in this country, it will be due as much to indifference toward the problems of the day as to any other thing. Will the medical profession fail in this regard? Only time will tell. There are encouraging signs that the profession is awakening to its responsibilities.

### CLASSIFICATION OF MEMBERS

Recently a physician called the Medical Society's Office stating that he desired to know by what method members of the Society were being classified according to type of practice. What procedure, he asked, has been adopted to determine a physician's qualifications as a specialist? This query suggested the desirability of reviewing the steps taken in preparing the classification.

At a business meeting of the Society on October 4, 1939, the Executive Board announced that during the summer it had authorized a canvass of the Society for the purpose of securing the information on which to base a classification of members. Members had been asked if they were engaged in a specialty or in general practice, and if in a specialty the extent to which they limited themselves. Additional information was also requested in regard to location, office hours and hospital affiliations. Response

to the questionnaire mailed to all Active Members several months ago has been most gratifying, some 595 having replied to date. However, there are 289 physicians who have failed to return their forms. Their names will, of course, not appear on the classified list until they return the questionnaires sent them.

At the time questionnaires were mailed members, hospitals of the District were asked to supply the Society with a list of their regular and courtesy medical staffs, indicating the type of work each physician was privileged to do. There was prompt response to this request, all hospitals supplying the needed information. Where any doubt existed, facts provided by members in regard to their special qualifications have been verified by consulting hospital lists. For example, if a physician stated in his questionnaire that he was a pediatrician, a member of some hospital staff, and that he enjoyed courtesy privileges in other hospitals, his statements, if he was unknown to the Board, were investigated further. In pursuing its investigation the Board also obtained information from special societies, groups or individuals who could be of assistance in establishing the physician's qualifications.

It can be readily seen that every effort has been and is being made by the Executive Board to determine the status of Society members. Obviously, it has had to rely to a large extent upon information provided by hospitals.

In regard to general practitioners, they have been listed according to districts—northwest, northeast, southeast and southwest sections of the city being listed separately. When a patient who has no physician calls the Society's Office and desires a general practitioner, three names are given him, from which the inquirer can make his choice. No physician, of course, is recommended nor does the Society's Office know to whom the inquirer goes. Where the inquirer desires the name of a specialist, he is asked if he has a family doctor and if so he is referred back to him for advice. If he does not have a physician or he does not want to go back to his

family doctor, the names of three specialists in the field inquired about are given him. Incidentally, each time a physician's name is given it is noted in a ledger used for that purpose. This assures fairness to all physicians listed as names are given an equal number of times where it is possible. At the close of the year the record will be turned over to the Executive Board for its examination.

At a recent meeting of the Board the classified list, which is nearly complete, was reviewed and approved. In fact the Board was enthusiastic about the results of its efforts and thought that the list would not only prove its value to the public but to the Society as well. Members who wish to see the list can do so by going to the Society's Office and making a request of the Secretary.

#### PERTINENT PARAGRAPHS

Most of the committees of the Society have been active since the resumption of the Society's activities this fall. Meetings have been held by the following committees:

|              |                                                          |
|--------------|----------------------------------------------------------|
| September 14 | Committee on Industrial Medicine                         |
| September 20 | Committee on Public Relations                            |
|              | Committee on Public Health                               |
| September 21 | Committee on Medical Economics                           |
| September 22 | Committee on Public Policy                               |
| September 25 | Executive Board                                          |
|              | Obstetrical Board                                        |
| September 29 | Board of Censors                                         |
| October 2    | Board of Censors                                         |
| October 13   | Committee on Medical Economics                           |
| October 16   | Obstetrical Board                                        |
| October 19   | Grievance Committee                                      |
| October 20   | Subcommittee on Deafness Prevention                      |
|              | Committee on Postgraduate Education                      |
| October 23   | Board of Censors                                         |
| October 24   | Subcommittee on Venereal Diseases                        |
|              | Advisory Committee to Washington                         |
|              | Self-Help Exchange and Goodwill Industries of Washington |
| October 25   | Subcommittee on Maternal Welfare                         |
| October 26   | Committee on Automobile Accidents                        |
| October 31   | Board of Censors                                         |

It is hoped that it will be possible in the near

future to report in more detail the activities of the various committees in the MEDICAL ANNALS.

Under date of June 13, 1939, a letter was directed by Dr. H. W. Wade, Medical Director of the Leonard Wood Memorial, Culion, Palawan, Philippines, to the Medical Society. It read as follows:

"In the collection of reprints sent us as part of the library of the late Dr. E. B. McKinley was included a copy of the Transactions of the Medical Society of the District of Columbia for July 19, 1877. This item was in an envelope marked 'Probably valuable; if not desired please return . . . ' to you. Since it would doubtless be of more value to you than to us here, I am returning it under separate cover."

To date the Transactions have not been received but as the letter was originally misdirected it is expected that there will be some delay.

Recently the Solicitor General petitioned the Supreme Court of the United States for a writ of certiorari to bring before it the case now pending in the Court of Appeals for the District of Columbia against the American Medical Association, et al. Reasons were set forth in the petition why the Supreme Court should assume jurisdiction in the case without it having been heard by the Court of Appeals. An answer to the petition was filed by legal counsel for the Society and other defendants. On October 23, 1939 the Supreme Court denied the Solicitor General's petition.

Some interesting editorial comments were made upon the Supreme Court's action. The following editorial entitled, "A Proper Setback," appeared in *The Washington Post* on October 24, 1939:

"At some future date the Supreme Court may find it desirable to review the Government's anti-trust case against the American Medical Association and the District Medical Society. The Department of Justice appears determined to fight Judge Proctor's decision to the last ditch. And the medical profession would cer-

tainly carry the dispute to the Supreme Court if the Proctor opinion should be overruled in the Court of Appeals.

"For the present, however, the Supreme Court has quite properly declined to review the case. It sees no reason for departure from the customary judicial procedure. No constitutional issue is involved in the charges against the Medical Association. The case turns merely upon interpretation of the anti-trust laws. The Department of Justice is attempting to stretch the Sherman act to provide protection for the Group Health Association against alleged restraints on the part of the organized medical profession.

"Should the Supreme Court set a precedent of accepting appeals directly from the Federal district courts, where no constitutional issue is involved, it would soon be overburdened with litigation. The statute giving constitutional cases a right of way to the highest tribunal makes it all the more important for the court to maintain a rigid check on other petitions for review of less vital or complicated issues.

"There are many indications that the anti-trust division has been unduly excited over the idea of prosecuting the Medical Association for alleged restraint of trade. In effect, the Supreme Court has sustained this criticism. It found nothing in the anti-trust division's petition to justify singling out this case for special attention. If the division insists upon clinging to its strained interpretation of the anti-trust laws, it will at least have to rely upon the customary procedure for final judicial clarification."

Impetus is being given the Speakers' Bureau by the Committee on Public Relations. As announced in the last issue of the MEDICAL ANNALS, a pamphlet has been prepared for public distribution describing the Bureau and other educational facilities of the Medical Society. A list of talks also appears in the pamphlet as well as directions to lay groups how to obtain speakers.

A large number of physicians who have volunteered to speak have failed to send in their outlines, as required by the rules governing the Speakers' Bureau. As it is very important that the speakers be available when called upon, those who have not done so are urged to forward their outlines at the earliest possible moment to the Committee on Public Relations for its approval.



The newly created Committee on Post-graduate Education is laying its plans for the winter. It proposes to present at least two courses in which nationally known authorities on the subject under discussion will participate.

An announcement regarding contemplated courses will be in the hands of members before this item appears.

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An intensive survey of all business establishments employing fifteen or more persons is being made by the Administrator of MUTUAL HEALTH SERVICE. Assistance is being given him by officers of the Society and the Lay Advisory Council. The Council held its first meeting on October 30, 1939, when consideration was given the methods by which it could be of help in promoting the interests of the SERVICE. As has previously been announced, Mr. Robert V. Fleming is Chairman of the Council and serving with him are a number of prominent civic and business leaders.

It is hoped that within the next month or two more detailed information can be given to the membership in regard to the progress of the SERVICE.

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An editorial in *The Journal of the American Medical Association* for October 14, 1939 states:

"Numerous alien physicians, and particularly physicians from Germany and the nations it has taken over, have been coming into the United States during recent years for permanent residence. In some states difficult situations have been created. During the eight federal fiscal years immediately preceding June 30, 1938, 3,165 immigrant physicians arrived, of whom 1,221 came from Germany and Austria. During the following fiscal year, which ended June 30 last, immigrant physicians numbered 1,384, of whom 819 came from Germany, which during that year absorbed the area formerly known as Austria. During the fiscal year 1931, immigrant physicians numbered 329, while during the fiscal year 1939, just ended, they numbered 1,384.

"How and where these 4,549 alien physicians are now located, what they are doing and what their prospects are of establishing themselves in the practice of their profession, if they have not already done so, is not

known. Those who have not yet become United States citizens or even taken out first papers are confronted by statutes and regulations which, except in four states and the District of Columbia, will bar them from licenses to practice."

It appears from the investigation that has been made that only Arizona, California, the District of Columbia, Indiana and Vermont permit the licensing of physicians who have neither citizenship or first papers.

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### MEDICINE, A LEARNED PROFESSION\*

Perhaps at this time when much is being said as to the nature of medical practice, it is well to give some heed to what we mean by a learned profession as distinguished from a trade or business. The professional man is, or should be, something of an idealist. He is guided by the ideals of his profession, rules of conduct which have been handed down and which, for instance, are embodied for the medical man in the Hippocratic Oath. The professional man is primarily a learned man, a man who depends upon his knowledge as his stock in trade. He has specialized knowledge over and above that of the common man in relation to some particular topic, be that law, theology, accountancy, teaching or medicine. Perhaps the thing that distinguishes him more than anything else is the peculiarly personal relation to the client or patient which he enjoys, a confidential relationship, a situation in which he is adviser, guide and friend, a situation in which his interest does not cease when the particular transaction is concluded. It follows as a corollary that he is an individualist, one who functions far more efficiently without regimentation or coercion, but rather requires the opportunity to utilize freely his own initiative and judgment within the limits of his professional code of ethics. He has, too, an interest in the results of this relationship in

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\* Excerpts from address by Winfred Overholser, M.D., Superintendent of Saint Elizabeths Hospital, delivered at the opening assembly of George Washington University School of Medicine, September 25, 1939. Reprinted from *Science*.

which he is called to advise, which is over and above the cash recompense which he receives; in fact, in the practice of medicine it is all too often the case that no monetary recompense is received at all, and more frequently the recompense is wholly inadequate to the value of the services rendered. The physician does not consider that he is receiving a *quid pro quo* when he is paid by his patient. It is not that he sells his opinion at so much a yard. He is entitled to a living, yes, but more than that he takes a satisfaction in seeing that the results of his advice have brought aid and comfort to the person who sought it.

Another feature is, or should be, the disregard of fixed hours, the readiness to be of service whenever called upon. It is a matter of regret to some of us in the medical profession to see certain other professional aides at times somewhat disinclined to regard this fundamental principle of the profession. The professional man is not a "clock-watcher." He does not count on regular hours. He realizes when he takes up the study of medicine that his sleep will often be interrupted, that his time will not really be his own, and he rejoices to feel that he may be called upon when others are in need regardless of his own comfort. One other point of distinction may be mentioned, and that is the principle as laid down in the Hippocratic Oath, that he will teach this art to others if they wish to learn it "without fee or stipulation." The physician, and indeed any professional man, should emulate the Clerk in the Canterbury Tales of whom Chaucer said: "And gladly would he learn and gladly teach." Such are a few of the distinctions which set off the learned professions, and particularly the profession of medicine, from business. Our earliest prototype, the priest in primitive society, was the guide, counsel and friend, the original professional man. We belong to one of the oldest professions, and we may feel confident that when in years to come we prepare to retire from active practice we may still be looked upon as the members of a profession.

## RADIO PROGRAMS

On several occasions in the past year we have brought to the attention of our readers the excellent radio programs which have been sponsored by the Medical Society through its Committee on Public Relations and its successor, insofar as radio programs are concerned, the Committee on Radio Education.

The following list of radio programs presented during October and November is indicative of the high standards being maintained by the present committee:

- October 3: Fifth Anniversary of Radio Education  
Dr. R. Lyman Sexton  
Dr. John H. Lyons, President of the Medical Society, Guest
- October 10: "Athletic Injuries"  
Dr. Karl Dortzbach  
Guest Speakers  
Mr. Max Farrington, Athletic Director of George Washington University  
Mr. Francis Stan, Sports Writer of Evening Star  
Mr. Robert Duncan, American Red Cross
- October 17: "Diseases Prevalent during War Time"  
Dr. R. Lyman Sexton  
Dr. Roberta Ma, Kantung, China, Guest
- October 24: "Cathartics"  
Dr. R. Lyman Sexton
- October 31: "Tuberculosis Occurring in Children"  
Dr. A. Barklie Coulter
- November 7: "Obesity"  
Dr. Fred A. J. Geier
- November 14: "Respiratory Conditions"  
Dr. P. A. McLendon
- November 21: "Tuberculosis Control in Washington"  
Dr. A. Barklie Coulter
- November 28: "Arthritis"  
Dr. Darrell C. Crain, Jr.

The personnel of the Committee on Radio Education is as follows: Dr. R. Lyman Sexton, *Chairman*, Drs. Darrell C. Crain, Jr., Karl Dortzbach, Clayton B. Ethridge, Fred A. J. Geier, Ralph J. Haws, Don S. Knowlton and Mr. Theodore Wiprud, *Secretary*.

As will be noted, several members of the Committee have taken part in the programs this

year. Their names are, of course, not used on the radio, where talks or dialogues are participated in by a radio family doctor known as "Dr. John."

Members are urged to listen in on the Society's radio programs, which are given each Tuesday at 12 noon over Station WMAL.

## MEMBERSHIP

The following were duly elected to membership at the business meeting October 4, 1939:

### *Active Members*

Percy Ansphera Bryant, 3800 New Hampshire Ave., N.W.  
Charles Seymour Coakley, Mayflower Hotel  
Horace Hatch Custis, Jr., 1852 Columbia Road, N.W.  
Cecile L. Fusfeld, 1816 R Street, N.W.  
Hayden Kirby-Smith, 1610 20th Street, N.W.  
Alan Truxton Morgan, 1726 Eye St., N.W.  
J. Thomas Schnebly, 900 17th Street, N.W.  
Leon Seley, 711 14th St., N.E.

### *Associate Members*

John George Ball, 308 Georgetown Rd., Bethesda, Md.  
Henry Louis Bastien, 3115 Wilson Blvd., Arlington, Va.  
Riley Henry Guthrie, Saint Elizabeths Hospital  
Robert Ammiel Hare, 722 Maple Ave., Takoma Park, Md.  
John Edward Lind, Saint Elizabeths Hospital  
J. Cameron McCluer, 520 Prince St., Alexandria, Va.  
William Meyer, Herndon, Virginia  
Ralph L. Morrison, LaSalle Apartments  
John Edward Payne, 3115 Wilson Blvd., Arlington, Va.  
Fred O. Tonney, Federal Trade Commission

The following applicants for membership will be voted on at the business meeting December 6, 1939:

### *For Active Membership*

Everett Samuel Caldemeyer, Washington University, St. Louis—1934  
Ralph Mearle Caulk, University of Kansas—1934  
Milton C. Cobey, Duke University—1934  
Francis Thomas Coleman, Georgetown University—1934  
Harold Albert Craft, George Washington University—1937  
Julius D. Damian, Georgetown University—1930  
James Albert Dusbabek, George Washington University—1934  
John Ellsworth Everett, George Washington University—1937  
Isaac Phillips Frohman, University of Maryland—1937  
Lendall Croxton Gay, Medical College of Virginia—1937  
Henry Arthur Grennan, University of Illinois—1934  
Jesse Lee Hall, Vanderbilt University—1916  
Caroline Jackson, Johns Hopkins Medical School—1937  
Edward Aloysius Kelly, Georgetown University—1934  
Henry Franklin Kreuzburg, Georgetown University—1937

Howard Ellsworth Newman, Georgetown University—1933  
Henry Sacks, George Washington University—1936  
Daniel Sondheimer, Johns Hopkins Medical School—1934  
Joseph Washington Stein, University of Tennessee—1934  
Sylvan Adolph Steiner, George Washington University—1937  
William Dandridge Terrell, Jr., George Washington University—1934

### *For Associate Membership*

Arnold Albert, George Washington University—1935

Recent changes in membership status:

*Reinstated to Active Membership upon payment of dues*

Edmund M. Ellerson

*Dropped from Active Membership, pursuant to provisions of Chapter IV, Article V, of the Constitution*

John Hooe Iden

*Resigned  
Active Members*

Elliott M. Campbell  
Eugene E. Willison

### *Associate Members*

Lauretta Eby Kress  
Edwin E. Ziegler

## CALENDAR FOR COMING MEETINGS

**Wednesday, November 15:** The Washington Heart Association will present a lecture by Tinsley R. Harrison, M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine, Nashville, Tenn., on "Recent Advances in the Understanding of Hypertensive States." Dr. Harrison, who recently published a book entitled "Failure of the Circulation," is a recognized authority on diseases of circulation.

**Wednesday, November 22:** No meeting.

**Wednesday, November 29:** Symposium on the Use and Abuse of Sulfapyridine.

"Sulfapyridine: Is It a Safe Drug?," Theodore G. Klumpp, M.D., Chief, Drug Division, United States Department of Agriculture.

"A Year's Experience with Sulfapyridine in the Treatment of Pneumonia," Theodore J. Abernethy, M.D.

"Serum or Sulfapyridine: Which Shall I Use?," Harry F. Dowling, M.D.

**Monday, December 4:** *Section on Gastroenterology.*

"Ulcerative Colitis—General Discussion," Thomas T. Mackie, M.D., New York City (member of American Gastroenterological Society).

**Wednesday, December 6:** Business Meeting.

**Wednesday, December 13:** "Diagnosis and Treatment of Peripheral Vascular Diseases: A General Survey," Eugene M. Landis, M.D., F.A.C.P., Professor of Medicine and



Head of Department of Medicine, University of Virginia  
Department of Medicine.

**Friday, December 15:** Joint meeting with the Baltimore  
City Medical Society at Baltimore.

The District Medical Society has arranged the following  
program:

"Pathogenesis and Prognosis of Bundle Branch Block,"  
Wallace M. Yater, M.D., F.A.C.P.

"The Care of Intractable Pain," Thomas Bradley, M.D.

**Wednesday, January 17:** Lecture by Rock Sleyster, M.D.,  
F.A.C.P., President of the American Medical Association.

## NEWS AND PERSONALS

The American Board of Ophthalmology announces a written examination March 2, 1940, in various cities throughout the country, which will be the only written examination in 1940. All applications for this examination must be received before January 1, 1940. All applicants must pass satisfactory written examination before being admitted to oral examination. Oral examination will be held in New York City June 8 and 10. Fall examination will be announced later. Candidates planning to take June examination must file case reports before March 1. For application blanks write at once to Dr. John Green, 6830 Waterman Ave., St. Louis, Mo.

The Twenty-ninth Annual Clinical Congress of the American College of Surgeons was held in Philadelphia, October 16-20, at the Bellevue-Stratford Hotel. Five Society members were inducted into fellowship at this meeting, Drs. Thomas Bradley, Philip A. Caulfield, Jerry K. Cromer, Don S. Knowlton and L. Conner Moss. In addition, the College awarded honorary fellowships to Dr. James Carre Magee, Surgeon General of the U. S. Army; Dr. Ross T. McIntire, Surgeon General of the U. S. Navy; and Dr. Thomas B. Parran, Surgeon General of the U. S. Public Health Service.

Dr. Howard F. Kane participated in the meeting October 20, at which time he conducted a panel discussion on Obstetrical Analgesia and Anesthesia.

District of Columbia membership in the American College of Surgeons now numbers 126, exclusive of those enrolled in the army and navy corps.

The Twenty-fourth International Medical Assembly of the Inter-State Postgraduate Medical Association of North America was held at the Palmer

House in Chicago, October 30-November 3, 1939. Dr. Wallace M. Yater was in charge of a diagnostic clinic on November 1. His subject was "Goiter and the Heart." Drs. Charles S. White, J. Lloyd Collins and David L. Weinstein presented a scientific exhibit on the blood bank.

The Association has announced a series of American Spring Assemblies, April 19 to May 15, 1940, to be held in some of the leading medical centers of the Middle West and Eastern United States. The cities and dates selected are as follows: Rochester, April 19-20; Chicago, April 21, 22, 23 and 24; Cleveland, April 25-26; Boston, April 27, 28, 29, 30 and May 1; New Haven, May 2; New York, May 3, 4, 5 and 6; Philadelphia, May 7, 8 and 9; Baltimore, May 10-11; Washington, May 12, 13 and 14.

In Washington members of the Assembly will be the guests of the teaching staff of Georgetown University School of Medicine. Dr. Wallace M. Yater will be chairman of the Committee on Arrangements.

The first of the William Alanson White Memorial lectures on psychiatry was held October 27 at 8:30 p.m. in the auditorium of the Interior Department. Dr. Harry Stack Sullivan, Professor of Psychiatry at the Georgetown University School of Medicine and President of the William Alanson White Psychiatric Foundation, is delivering the lectures. The program for the series is as follows:

October 26—"Conceptions of Modern Psychiatry"

November 3—"Organism and Environment"

November 10—"Diagnostic and Prognostic Syndromes"

November 17—"Explanatory and Therapeutic Conceptions"

November 24—"Prospective Developments and Research"

"Medicine in the News," timely topics from medical news of the week, will be presented by the American Medical Association and the National Broadcasting Company over the Blue Network, coast to coast, on Thursdays at 4:30 p.m., for thirty weeks beginning November 2, 1939. The programs will consist of facts, drama, entertainment and music. Watch local newspapers for radio announcements.

The George Washington University Medical Society held its first meeting October 21, at which time Dr. Jesse G. M. Bullowa, Clinical Professor of Medicine, New York University College of Medicine,

and Director of the Littauer Pneumonia Research Fund, Harlem Hospital, gave an address on the subject, "The Doctor's Responsibility to Pneumonia Patients."

The **Georgetown Clinical Society** will hold its next regular meeting at the University Club on November 21 at 8:30 p.m. Dr. Harry Zehner will present a paper entitled, "Cardiology." Drs. Henry B. Gwynn, John Cavanagh, Hugh Hussey and Samuel Desoff will lead the discussion.

At the first meeting of the year on October 17, Dr. James E. Nolan spoke on "Allergy in General Practice."

At the meeting of the **Clinical Club of Washington** on November 7, Dr. Norvell Belt gave a paper entitled, "Testicular Tumor with Endocrine Disturbance."

The second meeting of the **Washington Medical and Surgical Society** will be held November 27 at 7 p.m. at the Kennedy-Warren. Dr. Harry Dowling will discuss the topic, "Treatment of Pneumonia with Serum and Sulfapyradine." Case reports will be given by Dr. Joseph Horgan and Dr. Beveridge Miller.

The **Hippocrates-Galen Society** will hold its next meeting Thursday, December 7, at 8:30 p.m. Dr. B. W. Leonard will report "A Case of Dissecting Aneurysm with Specimen." Dr. E. R. Templeton will give the essay, "A Few Cardiac Problems."

At its last meeting, November 2, Dr. B. F. Weems reported a case of "Unusual Heart Enlargement." Dr. R. A. Keilty gave the essay, "The Evaluation of the Infectious Flora in the Dental Field."

The **Washington Society of Pathologists** held its first fall meeting at the Army Medical Museum on Saturday, October 7, at which time the following formal cases were presented: "Filariasis of the Testicle and Epididymis," H. E. Ragle, M.D.; "Fetal Adenoma of the Thyroid," Oscar B. Hunter, M.D.; "Undifferentiated Small Cell Carcinoma of Small Intestine," V. H. Cornell, M.D.; "Granulosa Cell Tumor of the Ovary," George Tolstoi, M.D., and "Report of a Case of Chondromyxosarcoma,"

J. H. McNinch, M.D. Informal presentations were made by Drs. R. M. Choisser, A. J. Suraci, J. Vincent Dardinski and Oscar B. Hunter.

The first meeting of the **Washington Ophthalmological Society** was held November 6 at the Episcopal Hospital. The following papers were presented: "Malignant Melanoma," Colonel G. R. Callender, and "Field Changes Following Satisfactory Filtration Operation for Glaucoma," Dr. John W. Burke. Dr. Frank D. Costenbader discussed "Specific Reading Difficulties." Case presentations were made by Drs. E. Leonard Goodman, Sterling Bockoven and E. C. Caldemeyer.

At the **Clinical Conference** of the staff of **Children's Hospital** on October 10, the following case reports were presented: "Neuroepithelioma of the Cerebellum in a Seven-Months-Old Infant," Dr. Edgar Copeland and Dr. Harry Kerr; "Pneumococcic Meningitis with Recovery in a Three-Months-Old Infant," Dr. Edward Broocks and Dr. Montgomery Blair.

The **Residents' Journal Club** of Children's Hospital met October 19. A paper on "Vitamin K and Prothrombin Time in Pediatrics" was given by Dr. Arthur Grossman; Dr. Bruce Bennett gave a review of recent pediatric literature. Films on "Resuscitation of the Newborn" and "Intracranial Injuries of the Newborn" were shown by courtesy of Mead Johnson and Company.

The **Section on Pediatrics** was invited to hold its first meeting of the year at the Chestnut Farms Dairy Auditorium on Thursday evening, October 26. A paper on the subject, "Homogenized Vitamin D Milk," was presented by Dr. E. V. McCollum of Johns Hopkins University.

The Reverend David V. McCauley, S. J., Dean of **Georgetown University School of Medicine**, announced October 21 the appointment of **Dr. Harry Stack Sullivan as Professor of Psychiatry and Director of the Department of Psychiatry and Neurology.** The position filled by Dr. Sullivan was previously held by the late Dr. D. Percy Hickling, who was a member of the faculty of Georgetown University for more than forty years.

Although in recent years Dr. Sullivan has been engaged in the practice of psychiatry in the city of

New York, he is well known to the members of his profession in the vicinity of Washington, and his reputation as an outstanding psychiatrist is appreciated throughout the world. From 1923 to 1930 Dr. Sullivan was the Associate Professor of Psychiatry at the School of Medicine of the University of Maryland. During the same period he was the Director of Clinical Research at the Sheppard and Enoch Pratt Hospital in Baltimore. Since 1935 he has been President of the William Alanson White Psychiatric Foundation and from 1936 the President and Faculty Chairman of the Washington School of Psychiatry. He has been Associate Editor of the *American Journal of Psychiatry* since 1927 and was one of the founders as well as the editor of the organ of the William Alanson White Psychiatry Foundation, *Psychiatry, a Journal of the Biology and Pathology of Interpersonal Relations*. He has been a contributor to numerous journals and works on psychiatry.

**Dr. Nathan N. Smiler's** appointment as alternate delegate to the U. S. Pharmacopoeial Convention in May, 1940 was confirmed by the Executive Board at its meeting September 25.

**Dr. Eugene W. Higgins** has been appointed chairman of the Health and Sanitation Committee of the American University Park Citizens' Association to serve for the ensuing year.

**Dr. Howard F. Kane** gave a paper before the International Congress of Anesthetists in Philadelphia, October 19, entitled, "Combined Oral and Rectal Administration of Paraldehyde for the Relief of Labor Pains."

**Dr. Errett C. Albritton** entertained at luncheon at the Cosmos Club October 19 in honor of Dr. Henry C. Bazett of the University of Pennsylvania School of Medicine, following a lecture which he delivered before the George Washington University medical students and faculty in the morning.

**Dr. George C. Ruhland** delivered a paper entitled, "Treatment as a Part of the Service of Health Departments," on October 19 before the Annual Meeting of the American Public Health Association which was held in Pittsburgh.

**Dr. Jacob Kotz** addressed the first weekly institute of the Jewish Community Center October 25 on the subject, "The Biological Aspects of Marriage."

[[ **Dr. Joseph Murphy** and **Dr. Paul J. Ewerhardt** participated in the Health Conference of the District of Columbia Parent-Teacher Association, which was held October 25 at the National Education Association building.

**The Kloman Instrument Company**, which has been located at 911-19th Street, N. W., for the past ten years, is moving to new and considerably larger quarters at 1822 Eye Street, N.W., on or about December 1. Modern equipment has been installed throughout. A feature will be a completely equipped examination room set up with all necessary furniture for a doctor's office.

## BOOKS RECEIVED FOR REVIEW

Acknowledgment is made of the following books which have recently been received for review:

**The Vitamins.** A Symposium arranged under the auspices of the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association. Price, imitation leather, \$1.50. Pp. 637. Chicago: American Medical Association, 1939.

**Fractures.** Paul B. Magnuson, M.D., F.A.C.S., associate professor of surgery, Northwestern University Medical School; attending surgeon, Passavant Memorial Hospital and Wesley Memorial Hospital, Chicago. Ed. 3, revised. Price, cloth, \$5.00. Pp. 511 with 317 illustrations. Philadelphia: J. B. Lippincott Co., 1939.

(Continued from page 325)

## BIBLIOGRAPHY

1. WILSON, L. B., AND CHOWNING, W. M.: Reports on the Investigation of So-called Spotted Fever. First Biennial Report of Montana State Board of Health, 1903, 27.
2. RICKETTS, H. T.: Contributions to Medical Science. Chicago, University of Chicago Press, 1911.
3. MCCOLLA, L. P.: M. Sentinel, 1908, 16, 87.
4. MAVER, M. B.: Transmission of Spotted Fever by the Tick in Nature. J. Infect. Dis., 1911, 8, 327.
5. DYER, R. E., RUMREICH, A., AND BADGER, L. F.: Typhus-Rocky Mountain Spotted Fever Group in United States. J. A. M. A., 1931, 97, 589.
6. PARKER, R. R.: Certain Phases of Problem of Rocky Mountain Spotted Fever. Arch. Path., 1933, 15, 398.



**MEDICAL SOCIETIES WITH LIMITED MEMBERSHIP**  
**WASHINGTON, D. C.**  
**1939-1940**

| SOCIETY                                                    | PRESIDENT                  | SECRETARY                   | NO.<br>MEETINGS<br>PER<br>YEAR | DATE OF MEETINGS                 | PLACE OF MEETING                                                                          |
|------------------------------------------------------------|----------------------------|-----------------------------|--------------------------------|----------------------------------|-------------------------------------------------------------------------------------------|
| Aesculapian                                                | H. P. Parker               | F. C. Allman                | 12                             | 1st Tuesday                      |                                                                                           |
| Association of Medical Fellows of<br>Georgetown University | E. R. Fenton               | J. A. O'Donoghue            | 16                             | 2nd & 4th<br>Tuesdays            |                                                                                           |
| Baltimore-Washington Dermatological                        | F. A. Ellis                | I. L. Sandler               | 8                              | 3rd Thursday                     | Alternating Balti-<br>more and Wash-<br>ington                                            |
| Clinical Club                                              | W. P. Herbst, Jr.          | H. S. Bernton               | 8                              | 1st Tuesday                      | Cosmos Club                                                                               |
| Clinico-Pathological                                       | H. G. Fuller               | H. L. Darner                | 14                             | 1st & 3rd Tues-<br>days          |                                                                                           |
| George Washington University                               | Arnold McNitt              | L. H. French                | 8                              | 3rd Saturday                     | G. W. U. Schl. of<br>Med.                                                                 |
| Georgetown Clinical                                        | J. R. Costello             | J. F. Rogers                | 8                              | 3rd Tuesday                      | University Club                                                                           |
| Hippocrates-Galen                                          | A. B. Coulter              | R. R. Rathbone              | 8                              | 1st Thursday                     |                                                                                           |
| International Medical Club                                 | Lee McCarthy               | P. S. Constanti-<br>nople   | —                              | On call                          | Mayflower Hotel                                                                           |
| Jacobi                                                     | Maurice Protas             | Isadore Rodis               | 8                              | 3rd Monday                       | Roger Smith Hotel                                                                         |
| Kober                                                      | W. M. Ballinger            | Don S. Knowlton             | 8                              | 3rd Monday                       | Columbia Country<br>Club                                                                  |
| Mackall                                                    | P. W. Gard                 | G. W. Ault                  | 7                              | 3rd Thursday                     | Kennedy-Warren<br>Apts.                                                                   |
| Medical Arts                                               | S. O. Foster               | M. W. Glover                | 7                              | 2nd Thursday                     | University Club                                                                           |
| Osler                                                      | E. M. McPeak               | T. J. Abernethy             | 8                              | 3rd Monday                       |                                                                                           |
| Pan American (D. C. Branch)                                | J. A. Lyon                 | A. A. Moll                  | 4                              | Sunday                           |                                                                                           |
| Saint Elizabeths Hospital                                  | Alexander Simon            | J. L. Hoffman               | 2                              | On call                          | St. Elizabeths Hos-<br>pital                                                              |
| Virginia, Maryland and District of<br>Columbia             | M. B. Hiden                | J. R. Young                 | 2                              | 3rd Wednesday<br>(May &<br>Nov.) | Alternating Va.,<br>Md. & D. C.                                                           |
| Washington Academy of Medicine                             | Karl Voegtlin              | E. C. Albritton             | 3                              | On call                          | Cosmos Club                                                                               |
| Washington Academy of Surgery                              | F. R. Hagner               | J. O. Warfield, Jr.         | 4                              | 2nd Friday*                      |                                                                                           |
| Washington-Baltimore Psycho-<br>analytic                   | Frieda Fromm-<br>Reichmann | D. M. Bullard               | 8                              | 2nd Saturday                     | Shoreham Hotel,<br>Wash.*<br>Belvedeve Hotel,<br>Baltimore. †<br>Columbia Country<br>Club |
| Washington Gynecological                                   | H. P. Ramsey               | J. R. Costello              | 5                              | 4th Saturday‡                    |                                                                                           |
| Washington Heart                                           | John Minor                 | B. W. Leonard               | 3-4                            | On call                          |                                                                                           |
| Washington Institute of Internal<br>Medicine               | L. C. Ecker                | C. R. L. Halley             | —                              | On call                          |                                                                                           |
| Washington Medical and Surgical                            | Beveridge Miller           | T. C. Thompson              | 7                              | 4th Monday                       | Kennedy-Warren<br>Apts.                                                                   |
| Washington Ophthalmological                                | Ernest Sheppard            | E. L. Goodman               | 4                              | 1st Monday†                      | Episcopal Hospital                                                                        |
| Washington Society of Pathologists                         | H. E. Ragle                | Lt. Col. V. H. Cor-<br>nell | 8                              | 1st Saturday                     | Army Medical Mu-<br>seum                                                                  |
| Washington Urological                                      | R. M. LeComte              | I. A. Pelzman               | 6                              | Monday—every<br>6 weeks          | Hay-Adams House                                                                           |
| Women's Medical                                            | Lillian Malone             | Carolyn Pincock             | 8                              | 1st Tuesday                      |                                                                                           |

\* October, December, February, April.

† November, January, March, May.

‡ October, November, January, March, May.

Note: Most of these societies begin their regular meetings in October and continue through May.

# MEDICAL ANNALS

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### THE SURGICAL TREATMENT OF MENTAL DISORDERS\*

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It has long been recognized that some patients with nervous or mental disorders undergo a striking psychologic alteration in response to some damage to the brain occurring in apoplexy or in attempted suicide. The nervous, apprehensive, depressed individual forgets his worries, at least for the time being, and assumes a philosophical outlook on life that is at variance with his former condition. It remained for Egas Moniz, however, to attempt by means of surgical operation the correction of mental abnormalities. There had been a few abortive attempts previously, but only as the functions of the frontal lobes became better known was it possible to operate upon the proper part of the brain.

This paper deals with recent advances in the surgery of the brain expressly for the purpose of correcting deviations in character, errors in thinking, mistakes in judgment, hallucinations, delusions, phobias, compulsions and other mental phenomena, whose cause is so poorly understood and whose treatment is so often unsatisfactory. In some respects this latest development is rather shocking in its implications. We have been taught to believe that

if we do not think correctly, it is because we do not have "brains enough." It is my purpose in this paper, therefore, to modify that teaching and to show that under certain circumstances we can think more constructively with fewer cortical cells actually in operation.

My associate and I have modified the original Moniz technic in several particulars.

#### THE OPERATIVE PROCEDURE

Coöperative patients can be operated upon under local anesthesia. This is of distinct advantage to us<sup>†</sup> because we can carry on a conversation with the patient while the operation is proceeding and witness the alteration in the intellectual processes that occurs as the quadrants of the frontal pole are sectioned one after another. Before the patient is draped but after the forehead has been shaved nearly to the vertex, a line is drawn parallel to the zygoma and at the distance of 5 cm. above it. Perpendicular to this line another is drawn 3 cm. back of the anterior rim of the orbit. Where these lines intersect will be found the coronal suture about

\* Abridgment of the Davidson Lecture read before the Society, October 11, 1939. The manuscript is in possession of the Society, 1718 M Street, N.W., Washington, D. C.

<sup>†</sup> The operations were performed by my colleague, Dr. James W. Watts. Only because of the requirements of the Davidson Lectureship has his name been omitted from the text.





temporal muscle replaced, the galea sutured, then the scalp, and a dressing is applied.

#### THE POSTOPERATIVE PERIOD

For a variable period after the incisions have been made in the frontal lobes the patient presents a peculiar state of mind. To somebody not acquainted with the nature of the change, it would seem as if the individual were perfectly all right, having come through the operation with minimum shock and discomfort, able to speak clearly, expressing no complaints except possibly a little throbbing in the head, and free from the distressing symptoms that had led to the operation. The patient's face is blank, expressionless, washed out. Sometimes there is no spontaneous activity; the limbs lie in one position for long periods of time. Sometimes the patient runs his hands over the bedclothes or the dressings, or fumbles with various parts of the body. At times he appears to be asleep, but one knows he is not asleep because he answers promptly and decidedly in response to questions about his condition. There is none of the restless striving to regain consciousness such as one finds after a person has been stunned by a blow on the head, and yet if the patient is asked about his surroundings he may be totally unable to tell where he is, who is around him, what day it is, and what has happened to him. Sometimes he denies he has been operated on, and when his attention is called to the dressings on his head he expresses no concern whatever.

If these patients are asked about the sensations, they insist that the sensations are still there. If they are asked whether the sensations bother them, they may reply affirmatively, but the expression on their faces belies their words, and finally if they are asked if they are worried about them the most truthful and conscientious of them will say "no." The bodily phenomena persist, possibly for a long time, but their ability to provoke fear in the individual is abolished; the fear that comes from within is lost, and the patient is calm and can turn his attention outward.

#### INTELLECTUAL PERFORMANCE AFTER PREFRONTAL LOBOTOMY

Possibly the most important question we have been called on to answer in discussing the effects of prefrontal lobotomy has concerned the intelligence after the operation.

Our own cases have offered unique material in this respect, since we have been able to carry out psychological tests before and at intervals following operation. We are greatly indebted, therefore, to Dr. Thelma Hunt of the Department of Psychology of George Washington University, who has tested the more coöperative of our patients. On the basis of 20 cases tested before and within two weeks after operation, she has summarized her results in the following terms: "There is less distractibility, and more satisfactory coöperation, although the initiative in starting the tests is somewhat less. Patients manifest less concern over incorrect performance, and they are slower in carrying out the tests. There is no evidence that the total intelligence, as we interpret the term, is decreased, and accuracy on the average is improved.

"In the interpretation of pictures, the general quality of performance is about the same, and following operation there is less tendency to interpret in relation to the self. In the Rorschach test the amount of response is not materially affected and the responses are less related to the self; there is a manifest tendency toward extroversion and a tendency to respond to the design as a whole, whereas in the word association test there is a tendency toward fewer peculiar responses and the responses are less related to the self. There are fewer hesitations and the total time is lowered. The Bernreuter extroversion-introversion test indicates a shift toward the extroversion, with lowering in the neurotic tendency."

#### REMOTE EFFECTS OF PREFRONTAL LOBOTOMY

The analysis of the symptoms is made in tables 1, 2 and 3. In table 1 the symptoms of the illness are given and the degree of relief indicated. Foremost comes a group of symp-

toms present in nearly all of the cases and indicating an uncomfortable state of nervous tension and fear. The single word "worry" stands out as a sort of "omnium-gatherum"

TABLE 1  
*Symptoms Relieved by Prefrontal Lobotomy\**

| SYMPTOMS                         | PRES-<br>ENT<br>BE-<br>FORE | RELIEF     |         |            |      |
|----------------------------------|-----------------------------|------------|---------|------------|------|
|                                  |                             | Persistent | Partial | Transitory | None |
| Worry . . . . .                  | 51                          | 34         | 6       | 10         | 1    |
| Nervous Tension . . . . .        | 51                          | 31         | 9       | 10         | 1    |
| Obsessive Thinking . . . . .     | 50                          | 33         | 7       | 9          | 1    |
| Apprehension . . . . .           | 49                          | 35         | 5       | 8          | 1    |
| Preoccupation . . . . .          | 49                          | 36         | 4       | 8          | 1    |
| Anxiety . . . . .                | 49                          | 36         | 4       | 9          |      |
| Depression . . . . .             | 48                          | 35         | 5       | 7          | 1    |
| Insomnia . . . . .               | 39                          | 23         | 11      |            | 5    |
| Introversion . . . . .           | 36                          | 24         | 6       | 5          | 1    |
| Indecisiveness . . . . .         | 36                          | 24         | 5       | 5          | 2    |
| Exhaustion . . . . .             | 35                          | 20         | 10      | 5          |      |
| Crying Spells . . . . .          | 35                          | 33         | 1       | 1          |      |
| Suicidal Ideas . . . . .         | 33                          | 31         |         | 2          |      |
| Agitation . . . . .              | 31                          | 22         | 4       | 5          |      |
| Hypochondriasis . . . . .        | 30                          | 23         | 3       | 3          | 1    |
| Obsessions . . . . .             | 27                          | 20         | 1       | 5          | 1    |
| Overmeticulousness . . . . .     | 27                          | 23         | 2       | 1          | 1    |
| Panic . . . . .                  | 23                          | 19         | 1       | 3          |      |
| Guilty Feelings . . . . .        | 23                          | 19         | 1       | 3          |      |
| Indigestion . . . . .            | 19                          | 16         | 3       |            |      |
| Mannerisms . . . . .             | 19                          | 8          | 6       |            | 5    |
| Suspiciousness . . . . .         | 17                          | 11         | 2       | 2          | 2    |
| Hostility . . . . .              | 17                          | 9          | 4       | 2          | 2    |
| Delusions . . . . .              | 16                          | 12         |         | 3          | 1    |
| Irritability . . . . .           | 12                          | 4          | 3       | 2          | 3    |
| Hallucinations . . . . .         | 11                          | 10         |         | 1          |      |
| Compulsions . . . . .            | 10                          | 5          | 4       |            | 1    |
| Frigidity or Impotence . . . . . | 9                           | 4          |         |            | 5    |
| Cold Hands and Feet . . . . .    | 8                           | 5          |         | 3          |      |
| Psychalgia . . . . .             | 7                           | 6          | 1       |            |      |
| Fear of Contamination . . . . .  | 6                           | 6          |         |            |      |
| Disorientation . . . . .         | 4                           | 4          |         |            |      |
| Catatonia . . . . .              | 4                           | 3          |         | 1          |      |
| Alcoholism . . . . .             | 3                           | 1          | 1       |            | 1    |
| Hysterical Paralysis . . . . .   | 1                           | 1          |         |            |      |

\* Three operative deaths omitted from tables.

to describe this group; it comprises worry, nervous tension, apprehension, anxiety, depression, insomnia, obsessive thinking, preoccupation and introversion. The intensity of this syndrome may be gathered by the fact that

two thirds of these patients had ideas of suicide. With this syndrome of fear or worry at the bottom of all the psychoses in our series, there are then smaller subgroups representing the diagnostic categories in which the patients fall. The symptoms of hypochondriasis or of crying spells stamp certain cases as involutional depressions and agitated depressions. In another direction of differentiation the obsessions and compulsions point to psychasthenic states and obsessive ruminative tension states, whereas the occurrence of hallucinations and delusions speaks more for the schizophrenias of various types. With few exceptions, the underlying tension state has been modified and fear has been more or less abolished. When there is no fear, there is no hate, and no obsessive dwelling upon the past with its feelings of guilt, nor upon the future with its uncertainty and indecision. The imaginary voices lose their power to instill fear and the patient is no longer afraid of others. As one woman expressed it: "I used to hate everybody because I was afraid of them. Now I'm not afraid any more, and I just love everybody."

Table 2 reveals the intellectual and emotional symptoms produced in this series of cases of prefrontal lobotomy. About halfway down the list come certain undesirable symptoms that result from too extensive subcortical transection of the frontal poles. Prolonged stupor and incontinence, and persistent euphoria, indifference and aggressive behavior are probably indicative of the fact that too much of the functioning tissue of the frontal lobes has been separated from the rest of the brain. Pronounced euphoria is a particularly interesting symptom. If it appears immediately after operation it seems to be an unfavorable sign. In these cases there is no disorientation or somnolence and a relatively rapid recurrence of the abnormal mental symptoms may be anticipated. On the other hand, if the euphoria is late in developing and succeeds a long period of dullness, inertia and unresponsiveness, then apparently the patient has lost too much and will

not be able to take hold of the realities of life or succeed in the struggle to maintain existence. We are pleased to see a little indifference, a little

more endurable than a complaining one. In between these extremes of failure to relieve symptoms, and especially the fundamental symptom of fear, on the one hand, and production in the patient of a vacuous lack of interest and ambition, on the other hand, lies somewhere a golden mean which can be found anatomically, we believe, in the plane of the coronal suture.

Table 3 gives in succinct form the somatic symptoms produced by prefrontal lobotomy. Gain in weight and increase in appetite head the list. In some instances this increase in appetite may be related to the freedom from the indigestion, hypochondriasis and visceral preoccupation of the patients before operation, and some of it may be related, at least in the early stages, to the lack of recognition of the passage of time between meals. Morbid hunger has been described as a phenomenon in frontal lobe disease and we have seen it a few times. Incontinence seems to result from the lack of interest that the patients show in their organic functions. The blood pressure tends to fall following operation, and may fluctuate widely, but in a hypertensive individual it fairly soon regains its former range. Nevertheless there is a tranquilizing effect upon the heart and blood vessels generally.

Having dealt with the undesirable after-effects of operation, both the ineffective ones and the too effective ones, it is well perhaps to describe the individual in whom the operation has been made at the critical plane and who has made a satisfactory recovery without embarrassing deficit symptoms. The patient characteristically is back on the job and is doing good work, managing the detail, remembering what is important, and getting along satisfactorily with his fellow workers. At home he is pleasant, agreeable and a bit indolent. He is content to sit still and read or carry on with his hobby. He exercises a bit and welcomes friends when they drop in to call. It requires some urging to get him out of his rut, to go to church, to the movies or to visit friends. He may complain of feeling tired, and if there is a hook to be

TABLE 2

*Symptoms Produced by Prefrontal Lobotomy*

| SYMPTOM                     | PERSISTENT | TRANSITORY |
|-----------------------------|------------|------------|
| Emotional Flattening.....   | 29         | 12         |
| Procrastination.....        | 25         | 9          |
| Diminished Spontaneity..... | 24         | 18         |
| Laziness.....               | 23         | 15         |
| Slowness.....               | 18         | 13         |
| Indifference.....           | 15         | 27         |
| Poor Judgment.....          | 10         | 4          |
| Talkativeness.....          | 9          | 13         |
| Facetiousness.....          | 8          | 14         |
| Euphoria.....               | 7          | 17         |
| Sarcasm.....                | 6          | 7          |
| Startle Reaction.....       | 5          | 7          |
| Restlessness.....           | 4          | 17         |
| Aggressiveness.....         | 4          | 8          |
| Inattention.....            | 2          | 19         |
| Unresponsiveness.....       | 2          | 34         |
| Perseveration.....          | 2          | 4          |
| Playfulness.....            | 2          | 11         |
| Indecency.....              | 2          | 3          |
| Confabulation.....          | 1          | 8          |
| Disorientation.....         | 0          | 33         |
| Somnolence.....             | 0          | 27         |

TABLE 3

*Somatic Symptoms Produced by Prefrontal Lobotomy*

| SYMPTOM                   | PERSISTENT | TRANSITORY |
|---------------------------|------------|------------|
| Gain in Weight.....       | 22         | 0          |
| Increased Appetite.....   | 15         | 3          |
| Plateau Speech.....       | 8          | 18         |
| Masked Facies.....        | 7          | 20         |
| Convulsions.....          | 3          | 2          |
| Vesical Incontinence..... | 1          | 20         |
| Rectal Incontinence.....  | 1          | 6          |
| Monoparesis.....          | 1          | 1          |
| Vomiting.....             | 0          | 19         |
| Fainting Spells.....      | 0          | 3          |
| Babinski Sign.....        | 0          | 3          |
| Aphasia.....              | 0          | 2          |
| Reflex Grasping.....      | 0          | 1          |

laziness, a little of that joy of living that patients have sought in vain for such a long time. But if these symptoms are very marked we feel that we have not been of very much help to the family. Nevertheless a cheerful drone is probably



put up in a closet or a door latch to be fixed or the lawn mower to be oiled, it is put off until tomorrow and the next day. These people procrastinate, doing the work they have to do but postponing that which is not absolutely necessary. They are usually good-humored although rather sharp in their comments, sometimes caustic, and occasionally irritable. Not a few of them will admit to a little straightforward sarcasm. They are a bit more outspoken, and when they see humorous coincidences they are apt to laugh and to comment upon them, not infrequently making a play on words, and it seems funnier to them than it does to their hearers. Some of them are more talkative than they were before, and they are not embarrassed by the reaction that they are creating in their listener, going on and on, quite often on the same subject until all the possibilities of that topic are exhausted. Their attention is more easily focused on one thing and is less easily distracted than it was before. They experience a satisfaction with themselves and with surroundings, and if they can reach a goal that is somewhat short of perfection, they are content. Not that they make mistakes—they are often more exact than before. It is more in the quantity of work than in the quality where they fall down. They are often painstakingly accurate, and if given a routine repetitive task will go over and over it and on and on beyond normal patience.

Imaginative and constructive qualities are by no means eliminated. One young woman, after three years of disability, resumed her graduate studies in mathematics, and a man with a very severe obsessive-compulsive type of reaction, who had been reduced for eighteen months preceding operation to running errands for his wife, came to Washington a year after operation in order to patent an invention of his, an elliptical wheel-dressing device, a rather complicated instrument which he had designed in his imagination and then with drawing-board and tracing paper had finally completed. From being a cringing, grimacing,

totally preoccupied individual, he had turned into a clear-spoken, forceful man irradiating an air of assurance. A quiet, shut-in, young girl who had always been timid, and who for three months before operation sat in a catatonic stupor, took a long time to come back after an extensive operation, but then instead of returning to stenography and typewriting which she disliked she took a course in interior decorating and submitted to us a plan in colors for a parlor in the Adam style. An attorney for one of the large Government bureaus lost his job on account of chronic alcoholism and, although a university graduate and a Rhodes scholar, became a demonstrator for hosiery, going from door to door until he was finally called back to the Government service. A sales lady in a large department store, who had spent months in an institution, disturbed and assaultive, returned to her position with manifest satisfaction on all sides.

These examples serve to indicate also that the intellectual powers of these individuals are not crippled and that, provided the patients are of the right sort to begin with, they even may be able to utilize their constructive imagination in permanent productive occupation.

The eventual results, in terms of what the patient is able to do, as well as in terms of our estimation of the results from operation, are shown in tables 4 and 5. In these tables the patients are classified according to the type of mental disorder that has been diagnosed, apart from symptoms manifested by the patient during his illness.

Of the type of case coming to operation, the middle-aged individual suffering from an agitated depression seems to have the best outlook. This is not plainly revealed in the figures because of the occurrence of a number of these cases in the earlier part of the series when the operation was possibly inadequate. Recent results have been better in this type of case, although there have been few of them because they also respond so satisfactorily to the use of metrazol. Another large group is the obsessive-compulsive group,

and some of the early failures that had to be rectified by secondary operation occurred in such cases.

We are not ready yet to say very much about the schizophrenias. Our first operative results

TABLE 4  
*Present Status of Patients with Prefrontal Lobotomy*

| DISEASE                                      | REGULARLY EMPLOYED | STUDYING OF PARTIAL-<br>LY EMPLOYED | HOUSEKEEPING | AT HOME | INSTITUTION | DEAD |
|----------------------------------------------|--------------------|-------------------------------------|--------------|---------|-------------|------|
| Agitated Depression.....                     | 2                  | 1                                   | 5            | 8       | 1           |      |
| Involuntal Depression.....                   | 1                  |                                     | 1            | 4       |             | 1    |
| Obsessive Compulsive, Ruminative States..... | 2                  | 1                                   | 4            | 1       |             | 3    |
| Tension with Depression.....                 |                    |                                     | 2            | 3       |             |      |
| Schizophrenias.....                          | 4                  | 2                                   |              | 1       | 1           | 1    |
| Psychoneurosis.....                          |                    | 1                                   |              |         |             |      |
| Conversion Hysteria.....                     | 1                  |                                     |              |         |             |      |
| Chronic Alcoholism.....                      | 1                  |                                     |              |         | 1           |      |
| Manic Depressive Depression.....             |                    |                                     | 1            |         |             |      |
| Totals.....                                  | 11                 | 5                                   | 13           | 17*     | 3           | 5    |

\* Including three patients recently operated upon.

TABLE 5  
*Results of Prefrontal Lobotomy*

| DISEASE                                      | CASES | RESULTS |      |      | DEATHS    |            |
|----------------------------------------------|-------|---------|------|------|-----------|------------|
|                                              |       | Good    | Fair | Poor | Operative | Subsequent |
| Agitated Depression.....                     | 17    | 10      | 5    | 2    |           |            |
| Involuntal Depression.....                   | 7     | 3       | 3    | 1    |           | 1          |
| Obsessive Compulsive, Ruminative States..... | 11    | 7       |      | 1    | 3         |            |
| Tension with Depression.....                 | 5     | 4       |      | 1    |           |            |
| Schizophrenias.....                          | 9     | 5       | 1    | 3    |           | 1          |
| Psychoneurosis.....                          | 1     |         | 1    |      |           |            |
| Conversion Hysteria.....                     | 1     | 1       |      |      |           |            |
| Chronic Alcoholism.....                      | 2     | 1       |      | 1    |           |            |
| Manic Depressive Depression.....             | 1     |         |      | 1    |           |            |
| Totals.....                                  | 54    | 32      | 10   | 9    | 3         |            |

in these cases were not encouraging, and then, following the adoption of insulin and metrazol shock therapy, we called a halt upon all operations in this group until the results of shock treatment could be evaluated. Now that we

are faced with the fact that the shock treatment is by no means always effective in schizophrenia, we have been cautiously extending our observations in this condition. There have been so many high hopes for an effective treatment of the schizophrenias that we would rather merely say at the present time that recent cases are holding up well.

In regard to the involutional psychoses without agitation but with pronounced fixation upon this or that or the other organ or idea, the results have been much less satisfactory than when the syndrome was characterized by agitation and by the fear complex without undue fixation. It is the same fixation of symptomatology and of behavior in cases of alcoholism that has probably been the cause of the poor results. Even though the psychological need for alcohol may be done away with by prefrontal lobotomy, the motor pattern of behavior in these patients is so firmly established that the "bending of the elbow" becomes second nature to these people and they are unable to refuse a drink. There is even a further disadvantage in that the tolerance for alcohol is drastically reduced.

#### THE FUNCTIONS OF THE FRONTAL LOBE

From the study of the patients who have been subjected to prefrontal lobotomy we have been able to derive certain conclusions in regard to the function of the prefrontal areas. Many authors have spoken of the functions in terms of the higher psychic function, social sense, planned initiative, synthesis, and other terms, inferring the gathering together of the higher intellectual faculties and their moulding into a composite and well-integrated whole. From the study of the cases that form the basis of this paper, certain facts present themselves in a rather striking way and thus serve as a basis for philosophic speculation about the make-up of the human individual. It is well probably not to go too deeply into detail in these regards, but it may be useful to recapitulate for the moment what the operation does, what structures are involved, what the effects are, and then

to attempt to derive from those facts some interpretation of the functions of the frontal lobes.

Substantially, the operation cuts across the fibers connecting the frontal pole and the thalamus, the thalamus being the center for emotional feeling tone and the frontal poles concerned in the synthesis of intellectual operations.

From the physio-psychologic standpoint, what is done by the operation is to divorce imagination from feeling tone, or, as we explain to certain of our patients who are somewhat below the level of adult understanding, the "worry center is disconnected." We have shown that imagination is still present and that emotion is still present. There is a divorce between the two, however, as far as they concern the individual himself, with his inner sensations, ideas, recollections, ambitions and disappointments. The intellectual processes are still there, but the emotional component connected with them is reduced in greater or lesser degree.

That the frontal lobes exercise a directive influence upon the energies of the personality there can be no doubt, and the manner in which this is done has been suggested from time to time, but not until there were enough human patients available who could introspect and describe their inner experiences could a relatively coherent hypothesis be brought forward. It is not intelligence and not imagination and not emotion and not energy, alone or possibly even in combination, that lie at the bottom of the personal adaptation. It might seem that the frontal lobe exercises a directive influence upon the personality through the formation of the image of the total individual and the affect attached thereto. This brings us to the crux of the hypothesis of frontal lobe function.

The cerebral cortex may be considered as being divided by the rolandic fissure into two portions of essentially different function. The parts posterior to the fissure are concerned with the reception of impulses from receptors of various sorts situated all over the body, and with the elaboration of these impulses into engrams. By means of various association centers and

pathways, the individual is brought by the post-rolandic cortex into relation with all that has gone before in his existence. Experience and intelligence, the bases of his behavior, are mediated by this part of the brain.

Just as the post-rolandic cortex is concerned with the past, the pre-rolandic cortex is concerned with the future. Aside from certain small areas that are concerned with the direct execution of muscular movements and the regulation of visceral function, the rest of the frontal cortex is, according to our hypothesis, concerned with the projection of the whole individual into the future. With the intact brain, the individual is able to foresee, to see before, to forecast the result of certain activities that he is to initiate in the future, and he can visualize what effect those actions will have upon himself and upon his environment. One patient expressed his concept almost directly. He was the man who slapped his nurses and pulled the fixtures from the walls while still in the hospital. "Now that I have done it," he said, "I can see that it was not the thing to do, but beforehand I couldn't say whether or not it would be all right."

The patient with normally functioning frontal lobes can presumably define the goal toward which he is working and estimate more or less clearly the nearness to which he approaches it. By projecting himself into the future in his mind's eye he is calling upon his cortical mechanisms to synthesize past experience as his guide, and upon his emotional mechanisms for the driving force in the search for satisfaction and the avoidance of distress. Once the goal is set, he is further calling upon his cortical mechanisms to assemble the various parts of the problem and to select the proper course from among the many alternatives that present themselves to him at the completion of each separate step. Corollary follows theorem in logical anticipation, and total behavior is modified in response to changed conditions. Satisfaction or dissatisfaction depends upon the recognition of the nearness with which reality approaches the ideal.



Thus a certain planned initiative and the social sense described by Bianchi are brought under the same larger heading, and to this is joined the recognition of the self by the self, a factor that proved puzzling to Brickner. Insight demands that the individual shall erect in his mind an image of himself in relation to the outside world, and he can do this only if he projects himself into the future and sees himself as he should appear. In so doing, he also compares this image with that obtained from evidence furnished by his senses, once the act has been accomplished.

If this hypothesis is accepted, it makes more easily understandable many of the observed facts concerning frontal lobe disease. Inertia and lack of ambition, reduction in consecutive thinking, loss of what is commonly called self-consciousness, indifference to the opinions of others, satisfaction with performance even though this may be inferior in quantity and in quality—these may be considered as among the primary results. Euphoria, evasion, bluffing, talkativeness, moria, aggressive behavior, teasing, indecency in speech and acts, inattention, poor judgment—these might be classed among the secondary results.

Is it possible from consideration of the hypothesis enunciated above to arrive at a better understanding of the neuroses and psychoses—their genesis, their mechanism, their course? We believe so, but the discussion would carry us too far afield. It need only to be mentioned

that the idea of projection into the future reaches much the same conclusion from the physiologic standpoint that the concept of an Ego-ideal reaches from the psychologic standpoint. In this respect the physiologic and psychologic concepts of the mind can be said to approach one another more closely.

#### SUMMARY

In conclusion, prefrontal lobotomy, carried out surgically, produces a certain change in the personality of the individual, characterized by a reorientation in the direction of extroversion, and a reduction in the interest in the self. It eliminates obsessive thinking; it reduces self-consciousness; and it promotes satisfaction with self and surroundings. Fear of the future is no longer present. Following operation, the patient behaves differently; his behavior seems to depend to some extent upon his original make-up and to some extent upon the amount of frontal lobe that is still in connection with the rest of the brain.

The most satisfactory results from the operation are achieved in the obsessive-compulsive neuroses and in the involutional depressions with agitation, whereas the results in chronic alcoholism have been negligible, and those in the schizophrenias are still under consideration. The relief of some symptoms and the production of others are discussed. When the balance is drawn, prefrontal lobotomy seems to offer something of value in the relief of intractable neuroses and psychoses.

**Storage of Blood for Transfusions Should Be Limited to Ten Days.** A limit of between five and ten days for the use of blood for transfusion after it has been stored appears to be a safe restriction, due to the less satisfactory or even dangerous results which may follow the use of older blood, *The Journal of the American Medical Association* for December 2, 1939, recommends in an editorial.

"The obvious advantages of storing blood for transfusion have led to the adoption of 'blood banks' by many large hospitals throughout the country," the editorial points out. "With regard to results of transfusion, it has been found that there is no difference in the incidence of untoward reactions provided the blood has not been kept too long.

"Investigations indicate that blood more than from a week

to ten days old is not equivalent to fresh blood. Indeed, with blood that is too old there is even some danger of blood in the urine and serious symptoms such as are known to result from the transfusion of incompatible blood.

"When the available data are taken into consideration, it is evident that the transfusion of preserved blood has acquired an important role. This is a great change in attitude from the opinion held less than two decades ago, when the transfusion of citrated blood even when fresh was looked at askance. However, there are definite limitations to the use of stored blood which should be taken into account. Pending further investigation, a safe limit to set for the use of such blood would be between five and ten days. Perhaps by improving the method of storing blood it may be possible to extend the time limit."

## THE SIGNIFICANCE OF BLOOD CHOLESTEROL DETERMINATIONS\*

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Blood cholesterol has a threefold interest to the clinician: (1) In its relationship to metabolic processes, nutritional states and diet; (2) in the disturbances of cholesterol metabolism which result in pathologic and clinical conditions; and (3) in the modifications of the blood cholesterol level due to the effect of certain diseases; and, conversely, in the value of cholesterol determinations as aids in the diagnosis of these conditions.

### BIOCHEMICAL CONSIDERATIONS

Cholesterol is an unsaturated secondary alcohol which is soluble to an appreciable degree only in bile. It is present in liberal amounts in the tissues and fluids of the body, where it exists both as free cholesterol and as esters combined with fatty acids. Bloor<sup>1</sup> estimated that under normal conditions the esters constitute on an average 33.5 per cent of the total cholesterol of whole blood and 58 per cent of the total cholesterol of blood plasma. A part of the total cholesterol which is present in the body is thought to be derived from animal foods which have been ingested. As plants are incapable of cholesterol synthesis, none is derived from vegetable foods. Undoubtedly the greater part of the total cholesterol in the human body is formed by synthesis.<sup>2, 3, 4, 5, 6</sup> The ability of the animal body to synthesize cholesterol has been demonstrated by the presence of cholesterol derivatives in the feces of animals which ingest only plant food. The site and process of this synthesis has not been determined, but it has been suggested that the cholesterol of the bile may result from the breaking down of the erythrocytes and other cells by the hemolytic action of the bile. There is also evidence to indicate that the mucosa of the intestine may yield cholesterol.

The cholesterol content of the blood of a

normal individual is remarkably stable and does not appear to depend to a significant degree upon the ingestion of cholesterol-bearing foods.<sup>7, 8, 9</sup> Hubbard<sup>10</sup> demonstrated no appreciable variations in the blood cholesterol determinations taken before and after his subject had been kept on a high fat diet, nor before and after a low fat diet. It is not unusual, however, for a person to show a moderate temporary rise in the blood cholesterol level a few hours after the ingestion of food.<sup>11</sup> Cholesterol determinations are, therefore, uniformly obtained after a five-hour fasting period, when the temporary rise has subsided. Although under normal conditions of health and nutrition the cholesterol content of the blood does not fluctuate to any extent in a given person over a period of years, wide variations have been demonstrated among different individuals.<sup>12</sup> Gardner and Gainsborough<sup>13</sup> have pointed out that these variations are too great to be explained on the basis of variations in the direct absorption of cholesterol into the blood plasma from ingested food. The endogenous, rather than the exogenous, source of cholesterol would appear to maintain the constitutional equilibrium of blood cholesterol characteristic of each individual. According to Bloor<sup>14</sup> the maintenance of a constant cholesterol equilibrium in a given subject indicates that an efficient cholesterol regulation operates in health under normal conditions.

Under unusual conditions of nutrition the cholesterol concentrations of the blood may show abnormal deviations. Shope<sup>15</sup> observed a hypercholesterolemia during starvation in both animal and human subjects. The hypercholesterolemia was reduced by the ingestion of food of any type. Lennox and his associates<sup>16</sup> noted an increased cholesterol concentration in one patient and a decreased concentration in two patients, all of whom were undergoing prolonged periods of fasting. Man and Gildea,<sup>17</sup> who

\* Read at the Annual Scientific Assembly of the Society, May 5, 1938.

studied the serum lipoids in 47 cases of malnutrition, reported that among 31 emaciated patients, 26 showed subnormal cholesterol levels; among 6 patients who had sustained a severe weight loss without emaciation, 5 had cholesterol levels within normal limits. Obesity does not appear to alter the cholesterol values. In a study of 53 obese patients who presented no evidence of metabolic, arthritic, or endocrine disturbance, Bruger and Poindexter<sup>18</sup> found normal cholesterol concentrations of the blood plasma. Hurxthal<sup>19</sup> reported that in a series of 21 cases of obesity, all but one had cholesterol values within normal limits.

The physiologic function of cholesterol metabolism is not fully understood, but it is known to be closely and primarily associated with the metabolism and assimilation of fats. It also appears to be related to the metabolism of proteins. In cases of a deficient protein intake or a defective protein metabolism, the cholesterol levels may be modified appreciably. Barker<sup>20</sup> experimentally fed 28 dogs with a diet deficient in proteins but adequate in calories, vitamins and minerals. He observed, first, a gradual fall of blood urea nitrogen, and, second, within two to four weeks a gradual increase in the blood cholesterol levels. During periods of from four to twelve weeks, a normal cholesterol level of from 175 to 200 mg. increased in many instances to 450 or 550 mg. per 100 c.c. of blood. When the diet was continued for months, cachexia resulted. Postmortem examinations commonly revealed extreme fatty destruction of the liver and moderate degenerative changes in the kidneys with an increase of fat. No significant reduction of the serum proteins and no marked edema were noted as long as the caloric intake was adequate. Barker also set forth his clinical observations of elevated cholesterol levels in certain patients who for months or years had been on a protein-restricted diet because of hypertension. When meat was added to the diet in these cases the cholesterol gradually fell to normal levels. In studies con-

ducted on women during pregnancy, the same observer noted that patients who were able to maintain a liberal protein diet and a normal cholesterol-urea relation were remarkably free from edema. In some instances during late pregnancy as many as four or five protein feedings a day were required to maintain the blood urea nitrogen at approximately normal levels. From his studies he concluded that urea-cholesterol determinations should be made in many nutritional and functional states when the usual therapeutic measures do not prove successful.

Abnormal cholesterol metabolism may in itself produce pathologic conditions through the formation of cholesterol deposits, as in xanthomatosis and atherosclerosis. Hurxthal and Hunt<sup>6</sup> have cited the following possible explanations for abnormal variations in cholesterol: (1) An abnormal synthesis of cholesterol in amounts beyond the individual's normal tolerance; (2) an abnormal affinity of the tissues for cholesterol, causing retention, including phagocytosis; (3) an abnormal precipitation or liberation of cholesterol; (4) hemoconcentration or dilution, resulting in an increase or decrease in the blood cholesterol level; (5) a failure in the mechanism of cholesterol destruction; and (6) a failure of the process of cholesterol elimination. These authors have also pointed out that almost all abnormal cholesterol deposits are associated with groups of fat or foam cells of supposedly reticulo-endothelial origin. They have advanced two theories to explain the process by which abnormal cholesterol deposits are formed. The first theory is that cholesterol is precipitated in the blood, where phagocytosis occurs through the action of reticulo-endothelial cells; these become fat cells and migrate into the tissues, where they may degenerate and liberate cholesterol. The second theory is that because of an altered permeability due to disease the tissues become infiltrated with cholesterol, and this deposited cholesterol is ingested in the tissues by reticulo-endothelial cells; thus fat cells are formed at the site where they are found.



## XANTHOMATOSIS

Essential xanthomatosis represents a constitutional and primary disturbance of the lipid metabolism which produces an excessive accumulation of cholesterol, deposited as yellowish nodules or plaques in the various tissues of the body.<sup>21, 22</sup> The most commonly seen form of this disorder is that in which the xanthomatous lesions appear mainly in the skin, mucous membranes or tendons. During the early stages of the disease occurring in children or young adults, the nodules or plaques are soft, movable and confined largely to the skin. Histiologically they are composed of masses of lipid-filled histiocytes, the characteristic fatty foam cells, which macroscopically appear as yellowish, spongy masses. They uniformly yield high cholesterol concentrations. In the later, or chronic, stages seen in patients of the older age groups, the xanthomatous deposits may appear as rubbery, fibrotic, deep-seated lesions of the joints. High cholesterol concentrations of the blood and plasma have been reported in cases of essential xanthomatosis, 845 mg. per 100 c.c. of blood in one instance<sup>23</sup> and 955 mg. in another.<sup>24</sup> In an occasional instance the cholesterol values have been found to be within normal limits. The cholesterolemia, when present, has in some cases been considerably reduced and the patient's clinical condition improved by his having been maintained for a prolonged period on a cholesterol-free diet.<sup>25, 26</sup> Sperry and Schick,<sup>24</sup> however, failed in two cases to obtain an appreciable reduction in either the hypercholesterolemia or the severity of the clinical condition, although one patient, 11 years of age, was carried on a cholesterol-free diet for 11 months. In their opinion, differences in the pathogenesis of the disease may be accountable for the fact that certain patients have reacted favorably to a cholesterol-free diet and others have not. They also pointed out that in the cases which have been improved by a cholesterol-free diet the ratio of combined cholesterol to free cholesterol of the blood serum was highly abnormal; in their

two cases the ratio was normal. This difference, they thought, might be an important diagnostic point.

Schüller-Christian's disease, which Rowland<sup>21, 22</sup> identified as being related to, or an osseous form of, essential xanthomatosis, occurs mainly in young children and proceeds, with remissions and periods of quiescence, to a fatal termination. The xanthomatous lesions appear in the dura, the cranial bones, the long bones, the thymus, lungs and pleurae, and may also appear in the viscera and the skin. The cranial lesions give rise to the characteristic syndrome of exophthalmos, diabetes insipidus, neurologic manifestations and glandular disturbances. There may also be gingivitis, local infections arising within the xanthomatous areas, enlargement of the liver and spleen, secondary anemia, and pulmonary involvement with dyspnea and cyanosis. Lichty<sup>27</sup> in the study of a case of an infant who died of Schüller-Christian's disease reported that the blood cholesterol values were normal when the patient was observed 6 months after the onset of the condition. No gross lipemia or cholesterolemia suggestive of faulty fat metabolism could be demonstrated. Cowie and Magee,<sup>28</sup> in a postmortem study of the lipid content of the various tissues in the case reported by Lichty, found no significant changes in the cholesterol values except in the tissues of the xanthomatous areas. In these tissues they demonstrated a high lipid content, 50 per cent of which was cholesterol. They also demonstrated that the xanthomatous portion of the right femur, which clinically had sustained a pathologic fracture, was twice as high in total lipid content and six times as rich in cholesterol as was the bone marrow from the more normal portion of the right femur. From his study of this case and of the cases reported in the literature, Lichty is of the opinion that the clinical progress of Schüller-Christian's disease does not depend upon the presence or the degree of the lipemia, that remissions occur spontaneously, and that therefore a low fat diet probably has little therapeutic value.

## ATHEROMATOSIS

Aschoff<sup>29, 30</sup> was the first to demonstrate that atheromatous plaques of the aorta contain a large quantity of cholesterol. Degenerative lesions of the arteries are commonly associated with senile disturbances, but experimental and clinical investigations have shown that similar changes may occur prematurely in conditions such as diabetes mellitus and myxedema which produce a disturbance of the cholesterol metabolism with an accompanying hypercholesterolemia. Studies<sup>31</sup> carried on among diabetic patients in the younger age groups have demonstrated that when these patients were on a high fat diet disturbances in lipid metabolism resulted in fatty infiltration and atheromatous degeneration of the intima of the arteries and fat deposits in the reticulo-endothelium system. These were the prominent findings at autopsy, even among children. In 1927 Joslin<sup>32</sup> advanced the opinion that an excess of fat in the diet of diabetic patients might be a factor in the premature development of atherosclerosis. Eight years later he<sup>33</sup> reported that by giving the diabetic patients of his clinic a diet which was lower in fat but higher in carbohydrates than they had formerly received, he had reduced the incidence of atherosclerosis among his patients, particularly among the children. In a study of arterial changes in young diabetic patients, Shepardson<sup>34</sup> noted that in his series of cases the reduction in the average level of blood cholesterol determinations paralleled the reduction in the incidence of atherosclerosis. Gibbs, Buckner and Bloor<sup>35</sup> studied two groups of cases, divided on the basis of the severity of the vascular lesions. They found that the total cholesterol levels were progressively higher in the two groups in proportion to the severity of the lesions. That the relationship between hypercholesterolemia and atherosclerosis is more than incidental is borne out by the results in numerous experiments in which degenerative lesions have been produced in the arteries of rabbits by feeding the animals cholesterol.<sup>36, 37, 38</sup>

Leary<sup>39</sup> reported that when a series of young rabbits was fed cholesterol 92.6 per cent of the animals developed coronary arterial changes comparable to the lesions found in man.

It is pertinent to call attention at this point to the fact that these studies on atherosclerosis, both clinical and experimental, have to do with pathologic or abnormal conditions. In diabetes there is a wide and general disturbance of the metabolic process involving a number of factors. The cholesterol diet which produced the vascular changes in the rabbits is unnatural to those animals. As Weiss<sup>40</sup> has pointed out, such extreme deviations from the normal diet of the rabbits might well produce an abnormal metabolism. Investigators have been unable to produce experimental atherosclerosis by feeding cholesterol to normal animals whose natural diet included cholesterol-bearing foods. It has likewise not been demonstrated that the ingestion of an excess of fats and cholesterol-bearing foods will produce arterial changes in normal man. The results under conditions of abnormal metabolism are, however, striking, and they suggest that fat and cholesterol concentrations have a tendency to produce degenerative lesions in the vascular system under abnormal conditions. When a patient with an inadequate cholesterol tolerance is maintained over a long period of time on a diet which is relatively low in carbohydrates but rich in fat and cholesterol-bearing foods, the diet may contribute to the premature development of degenerative lesions in the arteries, provided that there are predisposing factors present, such as diabetes, myxedema, hypertension, toxic or nervous influences. Blood cholesterol readings are of considerable value, therefore, as a means of determining the optimum diet for patients in whom conditions are present which predispose toward the development of atherosclerosis.

## RENAL DISEASE

In the so-called "lipoid nephrosis," hypercholesterolemia is a characteristic manifestation, at times with excessively high levels.<sup>41, 42</sup> The



total lipid concentrations of the blood are increased, and at autopsy fat deposits are found in the kidneys and to a lesser extent in the other viscera. In the nephrotic type of glomerulonephritis, increased blood cholesterol levels are a constant finding. What factors contribute to the hypercholesterolemia and the process by which it is produced are obscure. Various explanations<sup>43, 44, 45</sup> have been offered, but none have been reasonably well substantiated. In other types of glomerulonephritis the blood cholesterol values are not constant. Normal readings are present in many cases, but subnormal or high levels occur in other instances. However, there is much evidence to show that in glomerulonephritis, low or falling blood cholesterol values are evidence of an increasing insufficiency in renal function. Fleming<sup>46</sup> noted that a fall in the blood cholesterol level in cases of chronic interstitial nephritis was usually accompanied by the onset of uremia, and that a subsequent increase in the cholesterol value was associated with a diminishing uremia. Ashe and Bruger,<sup>47</sup> in a study of chronic nephritis with marked nitrogen retention, observed that in the blood plasma of most of their patients the cholesterol content was low for some time before death occurred, but that in a few instances it was low only in the terminal 24 or 48 hours. These investigators believed that the diminished cholesterol level in patients dying from uremia in glomerulonephritis was probably due to associated factors, such as anemia and cachexia. Cantarow<sup>48</sup> has reported cholesterol values as low as 48 mg. per 100 c.c. of blood in patients with advanced renal insufficiency and marked nitrogen retention. On the basis of his observations he was unable to establish a consistent relationship between the degree of nitrogen retention and the cholesterol concentration. He believed, however, that in these cases the determination of the blood cholesterol concentration was of distinct value from the standpoint of prognosis, since subnormal or rapidly falling values seemed to indicate a serious condition.

#### JAUNDICE

In diseases of the hepatic and biliary system blood cholesterol determinations are of considerable value as an aid in the differentiation between the types of jaundice. The obstructive type of jaundice, produced by calculi, strictures and neoplasms obstructing the bile ducts, is commonly accompanied by high blood cholesterol and bilirubin values, the increase in the cholesterol roughly paralleling the rise in bilirubin. When the obstruction is relieved the high cholesterol level drops to normal. The characteristic hypercholesterolemia is absent in cases of obstructive jaundice when marked cachexia or cholemia has developed or when an infectious process has supervened.<sup>49</sup> The hypercholesterolemia which occurs in uncomplicated obstructive jaundice marks a concomitant rise in both the free and ester fractions in from 50 to 75 per cent of the cases.<sup>50</sup> In the remaining cases the rise in free cholesterol is disproportionate to the increase in the ester fraction, which may remain within normal limits or fall to a subnormal level.<sup>51</sup> Epstein and Greenspan,<sup>52</sup> in a study of the blood cholesterol concentration in a series of 500 cases of hepatic and biliary tract diseases, found that among the group of 105 patients having obstructive jaundice, 78 per cent showed hypercholesterolemia, the highest value being 1500 mg. per 100 c.c. of blood, and 75 per cent showed an increase of cholesterol esters. The high cholesterol concentrations found in obstructive jaundice were thought to be due to retention in the blood of the cholesterol from the bile. This theory was based on the assumption that cholesterol was excreted mainly by the liver. The investigations of Sperry<sup>53</sup> and others,<sup>54, 55</sup> demonstrating that the intestinal mucosa excretes cholesterol in quantities comparable to, or surpassing, the amounts secreted by the liver, have made the retention theory inadequate.

In the nonobstructive type of jaundice, caused by diffuse parenchymatous, or acute degenerative, diseases of the liver, the cholesterol levels



remain within the normal range in the majority of cases, although the level may drop to subnormal or occasionally show a slight elevation. The parallelism between the high cholesterol and the high bilirubin concentration which is characteristic of obstructive jaundice is absent in the nonobstructive type, the bilirubin increasing but the cholesterol remaining within normal, or approximately normal, values. This disparity between the ratio of cholesterol concentration to that of bilirubin in obstructive jaundice and the ratio in nonobstructive jaundice provides a diagnostic aid in the differentiation of the two types. The cholesterol ester fraction is usually low in cases of nonobstructive jaundice associated with an acute degenerative process of the parenchyma of the liver.<sup>56</sup> The fall in the ester fraction appears to be proportional to the severity of the hepatic damage, the ester being low or even absent in the rapidly fatal cases. The patient's improvement is accompanied by an increase in the ester fraction. In the series studied by Epstein and Greenspan,<sup>52</sup> there were 111 cases of nonobstructive jaundice, of which 69 per cent showed a normal value of total cholesterol and 68 per cent a lowered ester fraction. Epstein and Greenspan noted that during the early and most intense stage of acute parenchymatous disease of the liver only traces of cholesterol ester could be found, although in mild cases the subnormal margin was slight. They also noted a persistently lowered ester fraction where the outcome was unfavorable and a rising level where clinical improvement was progressing. They concluded that a study of the cholesterol fraction provided a clue to both the severity of the disease and the prognosis.

#### MYXEDEMA AND HYPERTHYROIDISM

On the basis of their early studies on thyroid disorders, Epstein and Lande<sup>57</sup> concluded that the blood cholesterol level tends to maintain an inverse relationship to the basal metabolic rate. They found the blood cholesterol to be low in hyperthyroidism and high in hypothyroidism.

The validity of this relationship was subsequently supported by the clinical and experimental observations of numerous investigators.<sup>58, 59, 60</sup> Contradictory evidence, however, was set forth by other observers. Gardner and Gainsborough<sup>61</sup> studied the relationship of blood cholesterol levels and basal metabolic rates in 14 cases of exophthalmic goiter and in 4 cases of myxedema. Their observations in the cases of hyperthyroidism did not provide any support of Epstein's theory of an inverse relationship. In their cases of hypothyroidism they found that the cholesterol level was above the normal in the untreated cases of myxedema. They concluded that an inverse relationship appeared to be present in hypothyroidism. In a study of the blood cholesterol levels and the basal metabolic rates taken concurrently in a series of 145 consecutive patients, McGee<sup>62</sup> failed to find a correlation between the results of the two tests. Among 16 patients who presented an undoubted clinical picture of thyrotoxicosis, the cholesterol variations were not consistent for the group. Among 19 patients who had well-defined evidence of thyroid deficiency, there was no tendency for the plasma cholesterol levels to reflect the condition of the patient. He concluded that although thyroid disease is undoubtedly accompanied by cholesterol changes, the factors affecting the circulating cholesterol are too numerous for a single estimation to be of great significance. Mason, Hunt and Hurxthal<sup>58</sup> have reported that in cases of exophthalmic and adenomatous goiter with an associated hypocholesterolemia, subtotal thyroidectomy has been followed by an increase of the blood cholesterol to its normal level. This rise occurred coincidentally with a decrease in the basal metabolic rate, the reciprocal relation between these two factors being maintained.

It is generally agreed by investigators that the findings in myxedema have been more consistent than have those in hyperthyroidism. The presence of an abnormally elevated cholesterol level has been demonstrated repeatedly in

cases of thyroid deficiency. Hurxthal<sup>63</sup> expressed the opinion that hypercholesterolemia, when not explainable on any other basis, may be regarded as possibly due to a concealed myxedema and may be rationally treated by the administration of thyroid extract. He was also of the opinion that an abnormally high cholesterol level, in the absence of a few other causes, is more specifically indicative of hypothyroidism than is a subnormal metabolic rate. Thyroid therapy causes a decrease in plasma cholesterol levels in such cases, both clinically and in experimental animals.<sup>59, 64, 65</sup> Westra and Kunde<sup>66</sup> found that the administration of dried thyroid extract lowered the elevated cholesterol of cretinous rabbits. Similar observations in patients with hypercholesterolemia have been reported.<sup>64, 65, 67</sup> Cholesterol determinations are of value, therefore, not only in the diagnosis of thyroid disease but also in the regulation of thyroid therapy, especially in children or nervous individuals who often do not cooperate in the taking of a basal metabolic test.

Hypometabolism from causes other than thyroid dysfunction is usually not associated with the abnormally high blood cholesterol levels found in myxedema. In a group of 7 cases of known suprarenal and pituitary deficiency which Hurxthal<sup>19</sup> studied, low basal metabolic rates were present in all of the cases but they were not accompanied by high cholesterol levels except in one instance. Grabfield and Campbell<sup>68</sup> reported that in a series of 100 consecutive cases without thyroid disease no correlation was found between the basal metabolic rates and the blood cholesterol levels. Hurxthal and Hunt<sup>6</sup> found that when an elevation of metabolism was caused by dinitrophenol, it was not accompanied by a corresponding drop in blood cholesterol, as it was in hyperthyroidism. They concluded from their investigations that when a reciprocal relation is maintained between the basal metabolic rate and the blood cholesterol level, variations in cholesterol are due to variations in the function of the thyroid gland. They believe that blood

cholesterol determinations afford valuable aid in differential diagnosis.

In the experience of many clinicians, the determinations of the blood cholesterol level have been of inestimable value in acting as a control of the basal metabolic readings, and both tests are taken concurrently. For some years past I have routinely had blood cholesterol determinations made concurrently with the taking of the basal metabolic rate. In my series of cases there has been a reciprocal relation between the two findings except in a few instances when other factors were present to modify the relationship. Patients with aortic regurgitation are unable to cooperate in taking a basal metabolic test because of abnormal respiratory factors. In some instances repeated tests give a consistently high rate. Blood cholesterol tests in these cases are extremely useful in evaluating the function of the thyroid gland. It is my practice to repeat any tests which give abnormal readings in order to eliminate the possibility of errors. When there is a deviation from the accepted relationship between the basal metabolic rate and the blood cholesterol level both tests should be repeated.

#### SUMMARY

1. The cholesterol content of the blood of a normal individual is maintained at a remarkably constant level under normal conditions, and does not appear to depend to an appreciable extent upon the ingestion of cholesterol-bearing foods. However, under abnormal conditions of nutrition the blood cholesterol values may deviate from the normal.

2. Clinical and experimental evidence has been reviewed to show that blood cholesterol levels are modified appreciably in cases of a deficient protein intake or a defective protein metabolism. Cholesterol determinations aid in the differential diagnosis of disorders caused by protein deficiency.

3. Essential xanthomatosis is at present regarded as a manifestation of a general constitutional disturbance of the lipid metabolism

which produces cholesterol-rich deposits in the tissues of the body, and which is associated with a high blood cholesterol concentration.

4. It has been demonstrated by a number of investigators that diabetic patients on a high fat diet develop premature degenerative lesions in the vascular system. Blood cholesterol determinations are an index of fat metabolism. They constitute an important means of determining the optimum diet for patients in whom conditions are present which predispose toward the development of atherosclerosis.

5. Blood cholesterol determinations are of distinct value in determining the prognosis in cases of glomerulonephritis of the nephrotic type.

6. In jaundice associated with diseases of the liver and biliary tract, the blood cholesterol level affords a means of differentiating between the obstructive and the nonobstructive types. In parenchymatous diseases of the liver it affords a measure of estimating the hepatic damage and hence is of prognostic value.

7. It is generally agreed that in hypothyroidism the blood cholesterol level bears an inverse ratio to the basal metabolic rate, and that therefore cholesterol determinations are of value in the diagnosis of unrecognized myxedema. There is no general agreement as to the relationship between the cholesterol level and the basal metabolic rate in hyperthyroidism.

8. Blood cholesterol tests are extremely useful in evaluating the function of the thyroid gland in cases in which the patient is unable to cooperate in the taking of a basal metabolic test.

# BIBLIOGRAPHY

1. BLOOR, W. R., AND KNUDSON, A.: J. Biol. Chem., 1917, 29, 7.
2. GAMBLE, J. L., AND BLACKFAN, K. D.: Ibid., 1920, 42, 401.
3. CHANNON, H. J.: Biochem. J., 1925, 19, 424.
4. SCHOENHEIMER, R., AND BREUSCH, F.: J. Biol. Chem., 1933, 103, 439.
5. BLOOR, W. R.: Ann. Rev. Biochem., 1934, 3, 175.
6. HURXTHAL, L. M., AND HUNT, H. M.: Ann. Int. Med., 1935, 9, 717.
7. DENIS, W.: J. Biol. Chem., 1917, 29, 93.
8. HILLER, A., LINDER, G. C., LUNDGAARD, C., AND VAN SLYKE, D. D.: J. Exper. Med., 1924, 39, 931.

9. CAMPBELL, J. M. H.: Quart. J. Med., 1925, 18, 393.
10. HUBBARD, R. S.: J. Biol. Chem., 1923, 55, 357.
11. GARDNER, J. A., AND GAINSBOROUGH, H.: Biochem. J., 1928, 22, 1048.
12. SPERRY, W. M.: J. Biol. Chem., 1937, 117, 391.
13. GARDNER, J. A., AND GAINSBOROUGH, H.: Biochem. J., 1927, 21, 130.
14. BLOOR, W. R.: J. Biol. Chem., 1914, 19, 1.
15. SHOPE, R. E.: Ibid., 1927, 75, 101; Ibid., 1928, 80, 125; Ibid., 1928, 80, 133.
16. LENNOX, W. G., O'CONNOR, M., AND BELLINGER, M.: Arch. Int. Med., 1926, 38, 553.
17. MAN, E. B., AND GILDEA, E. F.: J. Clin. Investigation, 1936, 15, 203.
18. BRUGER, M., AND POINDEXTER, C.: Arch. Int. Med., 1934, 53, 423.
19. HURXTHAL, L. M.: Ibid., 1934, 53, 825.
20. BARKER, M. H.: M. Papers, 1936, Christian Birthday Vol., 316.
21. ROWLAND, R. S.: Arch. Int. Med., 1928, 42, 611.
22. ROWLAND, R. S.: See Oxford Medicine, edited by H. H. Christian and J. Mackenzie. London, Oxford, 1932.
23. SCHOENHEIMER, R.: Ztschr. f. klin. Med., 1933, 123, 749.
24. SPERRY, W. M., AND SCHICK, B.: Am. J. Dis. Child., 1936, 51, 1372.
25. GAÁL, A. M.: Ztschr. f. klin. Med., 1930, 113, 349.
26. THANNHAUSER, S. J.: Klin. Wchnschr., 1934, 13, 161.
27. LICHTY, D. E.: Arch. Int. Med., 1934, 53, 379.
28. COWIE, D. M., AND MAGEE, M. C.: Ibid., 1934, 53, 391.
29. ASCHOFF, L.: Lectures on Pathology. New York, Hoeber, 1924.
30. ASCHOFF, L.: See Arteriosclerosis: A Survey of the Problem, edited by E. V. Cowdry. New York, Macmillan, 1933, page 1.
31. WHITE, P., AND HUNT, H.: New England J. Med., 1930, 202, 607.
32. JOSLIN, E. P.: Ann. Clin. Med., 1927, 5, 1061.
33. JOSLIN, E. P.: See Rabinowitch I. M.: Ann. Int. Med., 1935, 8, 1436.
34. SHEPARDSON, H. C.: Arch. Int. Med., 1930, 45, 674.
35. GIBBS, C. B. F., BUCKNER, E., AND BLOOR, W. R.: New England J. Med., 1933, 209, 384.
36. ANITSCHKOW, N., from Arteriosclerosis (see ref. 30), page 281.
37. HARRISON, C. V.: J. Path. & Bact., 1933, 36, 447.
38. JOBLING, J. W., AND MEEKER, D. R.: Arch. Path., 1936, 22, 293.
39. LEARY, T.: Ibid., 1934, 17, 453.
40. WEISS, S., from Arteriosclerosis (see ref. 30), page 233.
41. GAINSBOROUGH, H.: Quart. J. Med., 1929, 23, 101.
42. LICHTENSTEIN, L., AND EPSTEIN, E. Z.: Arch. Int. Med., 1931, 47, 122.
43. MACHEBOEUF, M. A., AND SANDOR, G.: Bull. Soc. chim. biol., 1931, 13, 745.
44. FISHBERG, E. H., AND FISHBERG, A. M.: Proc. Soc. Exper. Biol. & Med., 1928, 25, 296; Biochem. Ztschr., 1928, 195, 20.
45. FISHBERG, E. H.: J. Biol. Chem., 1929, 81, 205.
46. FLEMING, C. M.: Lancet, 1931, 1, 1390.

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## BLOOD CHANGES PRODUCED IN RABBITS BY INDOL

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Though indol has been the subject of intensive chemical investigation, the pathologic effects that accrue from its administration have received comparatively little study. Büngeler,<sup>1</sup> in an effort to produce an experimental leukemia, injected indol into mice. Although a large proportion of his animals died within the first 2 months, the survivors were reported to have developed anemias and leukopenias. On the other hand, Rhoads and Miller<sup>2</sup> fed 1 gram of indol daily to dogs on a Goldberger diet and were able to demonstrate a hemolytic anemia.

At the suggestion of Dr. M. X. Sullivan, a study was made of the effect on the blood picture of injection of relatively small doses of indol into rabbits consuming a normal diet. The indol used was chemically pure and for the purpose of injection was dissolved in 40 per cent ethyl alcohol. A daily dosage of 80 mg. in 4 c.c. of 40 per cent ethyl alcohol was given subcutaneously. Five rabbits including 2 controls were used in the course of these experiments, which covered altogether a period of a little more than three months. The average weight of these rabbits was 2.5 kg.

Within 30 days after the initial dosage (fig. 1), the red blood corpuscles fell from 5,400,000 per cu. mm. to 3,500,000; while the hemoglobin went down from 87 per cent (Sahli) to 42 per cent. Then the dosage was reduced from 80 to 56 mg. and administered daily over a period of 2 weeks to determine whether or not a reduced dosage would produce any definite change in the levels of the red blood cell count. At the end of these 2 weeks (fig. 1), the erythrocytes had risen from 3,500,000 to 4,800,000, while the hemoglobin rose concurrently to 65 per cent. In order to reestablish the anemia, the daily dosage was increased to 84 mg. The red blood cell count quickly dropped to the three million level, and the hemoglobin fell to 38 per cent. Fragility tests, as determined by Sanford's method,<sup>3</sup> indicated a definite increase in resistance at this time. Study of the blood

smears during this period revealed a definite poikilocytosis, a readily evident variation in the size of the erythrocytes, and intense polychromasia. Reticulocytes were from 15 to 19 per cent above normal. Within 15 days after the production of the anemia and the increase in reticulocytes, the red blood cell count began to increase gradually and ultimately arrived at the five million level in spite of continued daily injections of high dosages of indol. On the other hand, the increase in hemoglobin did not run concurrently with that of the erythrocytes

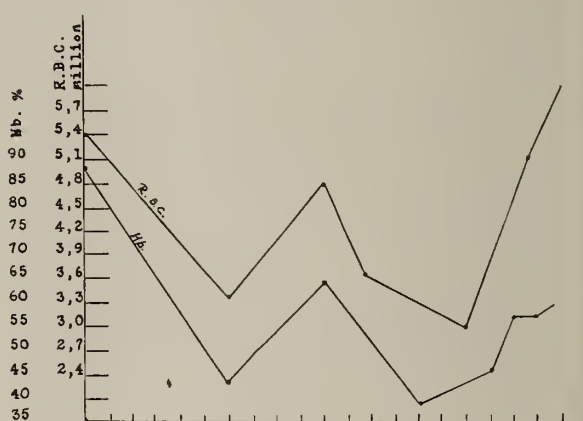


FIG. 1. The hemoglobin estimation and red blood cell count at 5-day intervals

and became fixed finally at the 60 per cent level. This was due, possibly, to the large number of reticulocytes in circulation.

Büngeler<sup>1</sup> in his work reported a leukopenia. In the present work no marked leukopenia occurred since the white blood cell count showed normal variations between 6,000 and 8,000 leukocytes per cu. mm. However, differential counts presented a rather interesting picture in so far as the neutrophils and lymphocytes were concerned. The neutrophils were discovered to have decreased from an original level of 54 per cent to a low level of 15 per cent, while the lymphocytes, on the other hand, were found to have increased from an original level of 42 per cent to 80 per cent. These observations

suggest that the lymphocytes functioned in the manner of a compensatory mechanism for the greatly reduced number of neutrophils.

Experiments are being continued with smaller dosages and over a more prolonged period to determine whether or not any practical biochemical or clinical conclusions can be evolved.

#### CONCLUSIONS

1. Indol, when given subcutaneously in the amounts mentioned in this paper, produced a hemolytic anemia with a definite reticulocytosis in the rabbit.

2. Indol produces in rabbits a definite neutropenia. The work accomplished thus far suggests

that it depresses in some way the leukopoietic marrow.

3. The changes produced in the red blood cell count as a result of the reduced indol dosage suggest that the erythropoietic marrow is able to counteract the hemolytic effect of indol within certain limits. When there is no reduction in dosage, a hemolytic anemia is quickly and progressively produced.

#### BIBLIOGRAPHY

1. BÜNGELER, W.: Die Experimentelle Erzeugung von Leukämie, Aleukämischen Myelosen, Lymphadenosen und Lymphosarkom. *Klin. Wchnschr.*, 1932, **11**, 1982.
2. MILLER, D. K., AND RHOADS, C. P.: Induced Susceptibility of Blood to Indol. *J. Exper. Med.*, 1938, **67**, 273.
3. SANFORD, A. H.: Diagnostic Methods in Anemias. *N. Y. State J. Med.*, 1919, **19**, 415.

### THE PROPOSED PHENOLPHTHALEIN TEST OF GASTROINTESTINAL DISEASE

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In June 1938 Woldman<sup>1</sup> made a preliminary report of a proposed simple test for determining the presence of gastrointestinal lesions. It should be emphasized that the author stated that his report was preliminary. Briefly, the test was as follows: A dose of phenolphthalein (1½ grains dissolved in 10 c.c. of 95 per cent grain alcohol diluted with 20 c.c. of water) is administered orally to the fasting patient. Specimens of urine are collected 2, 4, and 6 hours later. The urine is alkalized with sodium hydroxide, drop by drop. A pink to red coloration indicates presence of free phenolphthalein (a positive test); no red coloration indicates absence of free phenolphthalein (a negative test). Since free phenolphthalein is not normally present in the urine when the drug is administered in such small dosage, a positive test should indicate that the mucosa of the gastrointestinal tract is broken (organic lesion). If no free phenolphthalein is present, no organic lesion of the gastrointestinal tract is said to be present. The test was said to be accurate in 97 per cent of all cases, both organic and functional.

reported that they were unable to confirm the brilliant results obtained by Woldman. In their report covering 200 cases, 14 of 34 normal patients gave positive tests. Of the 110 patients ill of nongastrointestinal disease 91 gave positive tests. Of the 56 patients with known organic gastrointestinal disease only 44 gave positive tests. In their conclusions they state: "1. Free phenolphthalein appears in the urine whenever the quantity of conjugated phenolphthalein in any one specimen exceeds 5 mg. per 100 c.c. of urine. 2. In some abnormal individuals, e.g., cardiac, renal, and blood dyscrasia cases, free phenolphthalein appears at a lower concentration than 5 mg. per cent. 3. Hence, the appearance of free phenolphthalein in the urine cannot be considered a diagnostic test for gastrointestinal ulceration."

Kremer et al.<sup>3</sup> reported a series of 137 patients in which the test was correct in 56 per cent of patients with gastrointestinal lesions, and correct in 79 per cent of the patients with nongastrointestinal disease. They conclude, "This test may be valuable as an adjunct in diagnosis, but more must be learned of the physiology

In April 1939 Steigmann and Dyniewicz<sup>2</sup>

before it can be considered reliable as a simple test for determining gastrointestinal lesions." Also, at this time I reported an investigation of the test.<sup>4</sup> Ninety-four hospitalized patients were carefully studied on the diagnostic service of a large municipal hospital. The results were so inconsistent, especially in patients with proved digestive tract lesions, that it was concluded, "The proposed phenolphthalein test is of no value in differentiating gastrointestinal from nongastrointestinal disease, nor organic from functional gastrointestinal disease."

Notkin et al.,<sup>5</sup> reporting a series of 105 cases, found that 30 per cent of their cases with gastrointestinal lesions gave negative tests, while 46 per cent of their cases with no gastrointestinal disease gave positive tests. They stated that in a number of cases in which the test was repeated several times the results were inconstant, varying from negative to strongly positive; and that some of the cases giving the strongest positives had no gastrointestinal lesions. They conclude, "The Woldman phenolphthalein test does not constitute a test for the presence of gastrointestinal lesions." Recently Rowland<sup>6</sup> wrote an editorial in support of the test. He cited a case of ulcer in the mouth in which the test was positive. Another case was that of carcinoma of the stomach in which there was first a negative test, but later a positive one after the stomach had been washed. It is true that when a cotton sponge saturated with the alcohol-water-phenolphthalein solution is placed over an ulcer in the mouth for a few minutes, that patient will most likely give a positive test. However, this test is superfluous in diagnosing such a lesion. To wash or not to wash the stomach of the patient with possible bleeding from the esophagus or stomach is a problem in itself. Furthermore, the behavior of a solution of phenolphthalein in the stomach is an entirely different proposition than it is in either the mouth or the esophagus.

Recently Slutzky and Wilhelmj<sup>7</sup> reported on the value of this test in the experimental animal (dog). In 1 of 4 groups of dogs used, acute

surgical ulcer was produced in 5 dogs. Three of these dogs gave negative tests and 2 gave positive tests. They conclude, "The fact that the test was variable in acutely produced ulcers would seem definitely to exclude it as a test for determining the presence of ulceration in the experimental animal."

On pharmacologic and physiologic grounds one could predict that such a phenolphthalein preparation would never serve as an accurate test for detecting digestive tract lesions. First, phenolphthalein is almost insoluble in water and is only soluble in 1:13 parts in alcohol (Sollmann).<sup>8</sup> The 10 c.c. of alcohol in each dose is readily and quickly absorbed in the stomach and duodenum of the fasting patient. Phenolphthalein is insoluble in acids. Certainly the contents of most fasting stomachs are acid. Therefore, even if the 10 c.c. of alcohol was not absorbed, the gastric acid would quickly precipitate the drug. Further, the drug is only slightly soluble in the alkaline intestinal content. Second, it is not logical that 30 c.c. of an aqueous-alcoholic solution of any relatively insoluble drug given orally passes over the entire mucosa of the digestive tract. Such a dosage passes over most of the mucosa of the mouth and esophagus but necessarily misses much of the mucosa of the fundal and body portions of the stomach. The roentgenologist well knows how a liquid enters the stomach on the lesser curvature and continues toward the pylorus in the gastric groove, the path on the lesser curvature mucosa. In the lower part of the stomach the alcohol is quickly absorbed, and the phenolphthalein is precipitated because of its insolubility in both water and acid. From the stomach to the anus there is nothing to facilitate re-dissolving of the phenolphthalein, most certainly not in the alkaline small intestine. Conceive, if you can, of  $1\frac{1}{2}$  grains of phenolphthalein almost entirely in the solid state covering the entire mucosa of the small and large bowel. Third, the coagula usually present over ulcers that have bled recently often override the margins of the ulcers. Such coagula would be unfavorable to



absorption even in the esophagus and stomach before the drug has been precipitated.

Clinically, it is neither desirable to administer alcohol to patients with ulcerative gastric lesions nor to wash off the coagulum over an ulcer. Alcohol irritates, and to dislodge the coagulum would predispose to hemorrhage.

In conclusion, it is difficult to find either pharmacophysiologic grounds or clinical evidence to commend the proposed phenolphthalein test for determining digestive tract disease.

#### BIBLIOGRAPHY

1. WOLDMAN, E. E.: Simple Test for Determining Presence of Gastro-Intestinal Lesions. A Preliminary Report. *Am. J. Digest. Dis.*, 1938, 5, 221.

2. STEIGMANN, F., AND DYNIEWICZ, J. M.: Urinary Elimination of Free Phenolphthalein No Test for Gastro-Intestinal Ulceration. *Ibid.*, 1939, 6, 120.
3. KREMER, D. N., SHORE, P. D., AND WIESEL, B. H.: Phenolphthalein as Test in Gastro-Intestinal Disease. *Ibid.*, 1939, 6, 192.
4. SUTTENFIELD, F. D.: Proposed Phenolphthalein Test for Determining Presence of Gastro-Intestinal Lesions. *Ibid.*, 1939, 6, 206.
5. NOTKIN, L. J., KIRSH, E., AND SAUL, A.: Note on the Value of Woldman's Phenolphthalein Test for Gastro-Intestinal Lesions. *Ibid.*, 1939, 6, 365.
6. ROWLAND, V. C.: Editorial. *Ibid.*, 1939, 6, 396.
7. SLUTZKY, B., AND WILHELMJ, C. M.: Phenolphthalein as a Test for Gastro-Intestinal Ulceration in the Experimental Animal. *Ibid.*, 1939, 7, 449.
8. SOLLMANN, T.: *A Manual of Pharmacology*, 5th ed. Philadelphia, Saunders, 1936.

### THE MASKING EFFECTS OF SULFANILAMIDE ON MASTOIDITIS\*

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The number of mastoidectomies performed by the average otolaryngologist has decreased markedly in the past few years since the introduction of the use of sulfanilamide. That this is a remarkable drug I need not tell anyone who has given it an extensive trial. Many cases that would formerly have come to operation would now entirely clear up without surgery. And even many cases for which we had no specific remedy, such as meningitis, have yielded to its beneficial effects. When the drug was first introduced into this country I used it in many of my ear and sinus cases and was gratified to find the great majority of patients get well without any operative measures. I did not keep any statistics, but my feeling was that many patients got well who probably would not have done so if the drug had not been used. However, my first and only case of streptococcal meningitis following an acute mastoiditis during this time did not have such a happy ending, although sulfanilamide was given by mouth and Prontosil intravenously, intramuscularly and

intraspinaly in maximum doses. My colleagues nevertheless were seeing similar cases and reported some cures that were absolutely astounding, cases with high cell counts, with organisms in the spinal fluid, with stiffness of the neck, etc. It was a remarkable drug and I used it freely and thankfully.

As time went on I prescribed sulfanilamide for most of my patients who might even remotely have an infection due to the streptococcus, and I suppose with good results, although no comparable records were kept with similar cases treated without sulfanilamide. Only in hospitalized cases were white blood cell counts performed, and in none of them was there any leukopenia found, so that I do not know what effect the drug had on the blood of most of the patients. Each patient was advised to discontinue taking it temporarily if there was any nausea, vomiting, dizziness, weakness, or headache, or if the lips became slightly blue. Many of the patients had nausea or weakness and an occasional one dizziness or headache. Several patients even noted a bluish discoloration, and a few who looked very pale to me were told to discontinue the use of the drug. I used to

\* Read before the Section on Ophthalmology and Otolaryngology of the Society, March 18, 1938, and at the Staff Meeting of the Baltimore Eye and Ear Hospital, March 25, 1938.

prescribe four 5-grain tablets for the first dose, then 2 tablets every 4 hours; later on, sodium bicarbonate was added to each dose of sulfanilamide.

#### REPORT OF CASES ILLUSTRATING THE MASKING EFFECTS OF SULFANILAMIDE

**Case 1.** A little patient 2 years of age had acute otitis media on the right side. The ear-drum was bulging and the fever was high; I opened the drum and released serosanguineous fluid. The left ear drum looked boggy and was opened at the same time. There was no discharge from the left side at this time. Eventually the right mastoid was operated upon and was found to be a typically infected mastoid, with all cells full of pus and many broken down. The healing of the right mastoid was progressing normally for 2 weeks when the child began to rub his left ear. The left ear drum was found to be dull and slightly boggy but not definitely bulging. A myringotomy was performed with the release of about a drop or two of thick creamy pus which welled up lazily through the incision. Prontosil had just come into prominence and was given to the patient by injection, the amount being determined by his body weight. This was continued for 21 days, the child all the while apparently feeling well; he was playful and active but had an occasional slight rise in temperature. After the first few injections of Prontosil the discharge from the left ear stopped, and from that time on there was no discharge, although the tympanic membrane remained dull and pasty and the hearing in the left ear was poor. Otherwise there was no indication of anything wrong with the child. This condition continued for about 3 weeks, roentgenograms taken during this time showing a faint cloudiness of the left mastoid cells. After 3 weeks another roentgenogram showed destruction of some cell walls in the left mastoid. At operation, however, an amount of destruction was found that was not compatible with the physical signs noted above. The entire mastoid process was one large cavity filled with a thick gelatinous brown mucoid substance which was removed in one mass. The dural plate and the sinus plate were completely absent, exposing to view a dura which was dark blue. The sinus was soft and there was no evidence of any clot formation. The mucus was cultured and no growth was obtained. No pus was seen in any part of the mastoid. The child made an uneventful recovery.

I believe that in this case there was a low-grade infection to begin with, since the drum showed a pasty and thickened appearance from the onset. As in many cases the discharge ceased after the first few doses of the drug, and if the child had not had a rise in tempera-

ture of about 1 degree on the very day I would normally have discharged him from the hospital, I would have sent him home and probably not have had the opportunity to observe him daily. Although the roentgenograms showed cloudiness, that also was not sufficient evidence to operate on an apparently healthy child. Only after the last roentgenogram was taken and showed a breaking down of a few centrally located cells did I decide that operation was indicated. The finding of such complete destruction of the mastoid with exposure of the dura and sinus and the appearance of the mucoid mass were distinct surprises to me. The only other sign which was of importance was the marked diminution in hearing in an ear which did not appear to be badly diseased.

**Case 2.** A child aged 4 years had pain in the right ear for 2 days with a right facial paralysis for 1 day. The right side of the face was completely paralyzed, the right ear drum was dull and bulging, and the right anterior auricular gland was enlarged. There was a fever of several degrees. The tonsils were very large, inflamed, and studded with white patches. The right ear drum was opened with the release of some pus. Since it appeared that the follicular tonsillitis may have had some part in the etiology of the facial paralysis, particularly since the right ear had been painful for only a day before the onset of the paralysis, the patient was given sulfanilamide, 10 grains for the first dose and then 5 grains every 4 hours. The purulent discharge from the ear stopped within 24 hours, the fever disappeared, the tonsils cleared up shortly after, and the patient felt well. The facial paralysis remained the same, however. Although the aural discharge had ceased, the ear drum still did not regain its normal position and the posterior superior wall appeared to sag slightly. The hearing in this ear was poor and did not improve after the discharge had ceased. Mastoidectomy therefore was done on the fifth day. The entire right mastoid process was one large cavity lined with a thick membrane that resembled an abscess wall. When this membrane was opened it was found to enclose an empty cavity. It was a thick-walled sac and occupied the space of all the mastoid cells except the tip. When the sac was removed the facial nerve was found to be exposed for a distance of 2 cm. just as it makes its bend at the horizontal canal. The nerve was entirely intact and appeared uninjured and had apparently been exposed by erosion of its wall by the pressure of the sac. The sac extended to the antrum which contained some thickened granulation tissue but no pus. The sac was stripped from the bone and sent to the laboratory. No growth was obtained on culture of the sac. I am unable to account for an empty sac in the mastoid process, for the



sudden cessation of the purulent discharge from the middle ear after myringotomy nor for the sterile culture, unless the sulfanilamide inhibited any further growth of the organism after the pus had drained out following the myringotomy. The mastoid incision healed in a couple of weeks, the drum became normal, but the facial paralysis remained the same. Here as in the first case the hearing was greatly reduced and did not improve even though the discharge had ceased. This was one of the principal reasons for suspecting that there was progressing pathology in the mastoid.

**Case 3.** An adult woman had been having an earache for several days in the right ear. The ear-drum was red and bulging and was incised with the release of some pus. The nose was treated, irrigations of the right ear were ordered, and sulfanilamide was prescribed. In a few days the patient was apparently well with no more discharge or pain; she felt fine and was able to carry on her work. The right ear-drum, however, stayed dull and thick and the hearing was greatly reduced. For a week nothing more was heard from the patient, when one evening she had a sudden sharp pain over the right side of her face, head and ear and a moderate fever. The right ear-drum was found to be injected, but there was no bulging. The right mastoid was exquisitely tender. The pain, however, was not confined to the ear or mastoid but was over the entire right side of the head and face. No evidence of sinus infection nor dental trouble could be ascertained. The ear-drum was incised, and a small amount of serosanguineous secretion exuded. The next morning the pain was centered in the mastoid, the rest of the head and face feeling normal. Because of the marked tenderness over the right mastoid, the serosanguineous discharge, the poor hearing, etc., the patient was sent to the hospital for further study and treatment. Under sulfanilamide therapy the ear again apparently cleared up; there was no more pain, discharge or tenderness. The ear-drum was still dull and thick and there appeared to be a slight sagging of the posterior superior wall of the canal. Hearing was still very poor. Roentgenograms showed slight haziness of the mastoid cells but no bone destruction. However, in spite of the lack of discharge I operated upon this mastoid and found a complete destruction of all cell walls, pus under great pressure, and erosion of the dural and sinus plates. Culture of this pus showed no growth of any kind. The patient made an uneventful recovery with complete restoration of her hearing. It was apparent that the course of the infection was not the usual one. It resembled more the course of a *Streptococcus mucosus capsulatus* mastoiditis than one of any other type, but in such cases I have never seen pus under such tremendous pressure

and so much bone destruction without more symptoms and with a sterile culture.

It may be that the amount of sulfanilamide administered in the cases cited above was just sufficient to keep the organisms from increasing in number but not sufficient to keep those which remained from continuing their destruction of the mastoid bone. Finally these organisms died after the destruction had been completed, and without further propagation of organisms absorption of the pus began. This theory may explain the sterile cultures in the mucoid secretion in one case, the pus found in another case, and the empty cavity in one of the cases.

It is my custom now to give large doses of sulfanilamide, starting with 20 grains and keeping the dose at 10 grains every 4 hours, and continuing the drug for a week after symptoms have apparently disappeared. Since following this method, I have had to do very few mastoidectomies in patients who have been given the drug. I feel therefore that although the various masking effects I have just reported may have been the result of the action of sulfanilamide, they may not have occurred had the drug been given in larger amounts, or in some cases continued for a longer period. Only more time and observation will tell.

#### CONCLUSIONS

1. Sulfanilamide does not necessarily remove the infection in acute mastoiditis, although the patient may improve symptomatically.
2. Marked destruction of the mastoid cells with exposure of the dura and sinus may occur without symptoms after the use of sulfanilamide.
3. Sulfanilamide has masked the usual symptoms of mastoiditis in several of my cases, except for the diminution of hearing.
4. If hearing remains greatly diminished after an apparent recovery from acute mastoiditis following the use of sulfanilamide, surgical mastoiditis must be suspected.



# MEDICAL ANNALS

*of the*

## DISTRICT OF COLUMBIA

*Editorial Office, 1718 M Street, N. W.*

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### THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

1. The establishment of an agency of federal government under which shall be coördinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

Today the medical and health functions of the United States are divided among a multiplicity of departments, bureaus, and federal agencies. Thus, the United States Public Health Service is in the Federal Security department; the Maternal and Child Welfare Bureaus in the Department of Labor; the Food and Drugs Administration in the Department of Agriculture; the Veterans' Administration and many other medical functions are separate bureaus of the government. The WPA, CCC, and PWA are concerned with a similarity of efforts in the field of preventive medicine. The Federal Works Administration and the Federal Housing Administration also have some medical functions.

Since 1875, the American Medical Association has urged the establishment of a single agency in the federal government under which all such functions could be correlated in the interest of efficiency, the avoidance of duplication, and a saving of vast sums of money. Such a federal health agency, with a secretary in the cabinet, or a commission of five or seven members, including competent physicians would be able to administer the medical and health affairs of the government with far more efficiency than is now done.

2. The allotment of such funds as the Congress may make available to any state in actual

need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

The physicians of the United States have given freely of their time and of their funds for the care of the sick. Their contributions to free medical service amount to at least \$1,000,000 a day. The physicians of this country have urged that every person needing medical care be provided with such care. They have urged also the allotment of funds for campaigns against maternal mortality, against venereal disease, and for the investigation and control of cancer. The medical profession does not oppose appropriations by Congress of funds for medical purposes. It feels, however, that in many instances states have sought aid and appropriations for such functions, without any actual need on the part of the state, in order to secure such federal funds as might be available. It has also been impossible, under present technics, to meet actual needs which might exist in certain states with low per capita incomes, with needs far beyond those of wealthier states, in which vast sums are spent.

It is proposed here simply that Congress make available such funds as can be made available for health purposes; that these funds be administered by the federal health agency, mentioned in the first plank of this platform, and that the funds be allotted on proof of actual need to the federal health agency, when that need be for the prevention of disease, for the promotion of health, or for the care of the sick.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

Obviously if federal funds are made available to the individual states for the purposes mentioned in the second plank of this platform, there might well be a lessened tendency in many communities to devote the community's funds for the purpose, and, in effect, to demand that the federal government take over the problem of the care of the sick. Hence, it is suggested that communities do their utmost to meet such needs with funds locally available before bringing their need to the federal health agency, and that the federal health agency determine whether or not the community has done its utmost to meet such need before allotting federal funds for the purpose.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

The medical profession is not static. It wishes to extend preventive medical service to all of the people within the funds available for such a purpose. Obviously, this will require not only a federal health agency which may make suggestions and initiate plans, but also a mechanism in each community for the actual expansion of preventive medical service and for the proper expenditure of funds developed both locally and federally. In the development of new legislation such mechanism may be suitably outlined.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

The medical profession does not yield to any other group in this country in its desire to extend medical care to all of those unable to provide themselves with medical service. The American Medical Association through its House of Delegates has already recognized the possible existence of a small group of persons able to provide themselves with the necessities of life commonly recognized as standard in their own communities, but not capable of meeting a medical emergency. It is recognized, however, that only persons of the same community fully familiar with the circumstances can determine the number of people who come properly under such classification and that only persons in actual contact with such instances are capable of administering suitably and efficiently the medical care that may be required. Hence it is the platform of the American Medical Association that medical care be provided for the indigent and the medically indigent in every community but that local funds to be first utilized and that local agencies determine the nature of the need and control the expenditure of such funds as may be developed either in the community or by the federal government.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

In the so-called National Health Program it is asserted that one half the counties of the United States are without suitable hospitals, and vast sums are requested for the building of new hospitals. In contrast, reputable agencies within the medical profession assert that there are only 13 counties more than 30 miles removed from a suitable hospital and that in 8 of those 13 counties

there are five people per square mile. In the United States today the percentage of hospital beds per 1,000 of population is higher than that of any other country in the world. This fact is completely ignored by those who would indulge in a program for the building of great numbers of new hospitals.

Moreover, it seems to be taken for granted that hospital building has languished in recent years, whereas considerable numbers of hospitals have been built with federal funds by various state agencies and also by the PWA, the WPA and by the Federal Works Administration.

Analyses may indicate that in many instances such hospitals were built without adequate study as to the need which existed or as to the possible efficient functioning once it was erected. Moreover, there is evidence that in recent years many of the hospitals of the United States known as nonprofit voluntary hospitals have had a considerable lack of occupancy due no doubt to the financial situation in considerable part. It seems logical to suggest then that such federal funds as may be available be utilized in providing the needy sick with hospitalization in these well established existing institutions before any attempt is made to indulge in a vast building program with new hospitals. In this point of view the American College of Surgeons, the American Hospital Association, the Catholic Hospital Association, the Protestant Hospital Association and practically every other interested voluntary body agree.

Again it has been argued that the demands for medical care in some sections of the country might require the importation of considerable numbers of physicians or the transportation of numbers of physicians in the areas in which they now are to other areas. In this connection it would seem to be obvious that a change in the economic status of the communities concerned would result promptly in the presence of physicians who might be seeking locations. The utilization of existing qualified facilities would be far more economical than any attempt to develop new facilities.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

In the United States today our sickness and death rates are lower than those of any great country in the world. This fact was recognized by the President of the United States when he sent the National Health Program to the Congress for careful study. The President emphasized that a low death rate may not mean much to a man who happens to be dying at the time of



tuberculosis. The medical profession recognizes the importance of doing everything possible to prevent every unnecessary death. At the same time it has not been established by any available evidence that a change in the system of medical practice which would substitute salaried government doctors for the private practitioner or which would make the private practitioner subject to the control of public officials would in any way lower sickness and death rates.

There exists, of course, the fact that some persons are unable to obtain medical service in the circumstances in which they live and that others, surrounded by good facilities, do not have the funds available to secure such services. Obviously here again, there is the question of economics as the basis of the difficulty and perhaps lack of organization in distribution of medical service and a failure to utilize new methods for the distribution of costs which might improve the situation.

The medical profession has approved prepayment plans to cover the costs of hospitalization and also prepayment plans on a cash-indemnity basis for meeting the costs of medical care. It continues, however, to feel that the development of the private practice of medicine which has taken place in this country has led to higher standards of medical practice and of medical service than are elsewhere available and that the maintenance of the quality of the service is fundamental in any health program.

#### 8. Expansion of public health and medical services consistent with the American system of democracy.

Careful study of the history of the development of medical care in various nations of the world leads to the inevitable conclusion that the introduction of methods such as compulsory sickness insurance, state medicine and similar technics results in a trend toward communism or totalitarianism and away from democracy as the established form of government. The intensification of dependence of the individual on the state for the provision of the necessities of life tends to make the individual more and more the creature of the state rather than to make the state the servant of the citizen. Great leaders of American thought have repeatedly emphasized the fact that liberty is too great a price to pay for security. George Washington said, "He who seeks security through surrender of liberty loses both." Benjamin Franklin said, "They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety."

In these times when the maintenance of the American democracy seems to be the most important objective for all the people of this country, the people may well

consider whether some of the plans and programs that have been offered for changing the nature of medical service are not in effect the first step toward an abandonment of the self-reliance, free will and personal responsibility that must be the basis of a democratic system of government.

### HEPARIN IN SUBACUTE BACTERIAL ENDOCARDITIS

Treatment of subacute bacterial endocarditis due to *Streptococcus viridans* has been almost uniformly ineffective. Apparently this is due mainly to the fact that the nidus of infection on the heart valve is protected by a barrier of fibrin which prevents access of destroying leukocytes to the infecting organisms. Deposition of platelets and fibrin proceeds more rapidly than sterilization of the vegetation implanted upon the valve. The use of chemotherapeutic agents, such as sulfanilamide, Prontosil and sulfapyridine, may produce temporary improvement by lowering the temperature and sterilizing the blood stream, but these effects pass off after a varying period of time.

With these facts in view, two independent groups of investigators have recently issued preliminary reports<sup>1, 2</sup> on the use of heparin in the treatment of subacute bacterial endocarditis. The drug was employed in the hope that it would prolong the clotting time sufficiently to prevent further thrombotic deposition on the valvular vegetations and thereby permit other mechanisms to overcome already existing infection.

Kelson and White<sup>1</sup> have reported 6 cases of subacute bacterial endocarditis and 1 case of acute bacterial endocarditis all treated with heparin in addition to sulfapyridine. The heparin was administered by uninterrupted intravenous drip day and night in a solution of physiologic sodium chloride (10,000 units of

1. Kelson, S. R., and White, P. D.: A New Method of Treatment of Subacute Bacterial Endocarditis—Using Sulfapyridine and Heparin in Combination: Preliminary Report. J. A. M. A., 1939, 113, 1700.
2. Friedman, M., Hamburger, W. W., and Katz, L. N.: Use of Heparin in Subacute Bacterial Endocarditis: A Preliminary Report. J. A. M. A., 1939, 113, 1702.



heparin in each 500 c.c.). The rate of flow (usually from 15 to 25 drops a minute) was regulated to maintain the clotting time at approximately one hour (Lee and White method). Sulfapyridine was given by mouth in amounts sufficient to keep the blood level at or above 5 mg. per 100 c.c. Large amounts of vitamin C were given and transfusions of blood were made when necessary. In 4 of the 7 patients treated by these measures, administration of heparin could not be continued over a period of time long enough to allow the possibility of a beneficial effect. The remaining 3 patients received the heparin for more than a week. All 3 showed striking improvement and remained free from evidences of subacute bacterial endocarditis for 19 weeks, 18 weeks, and 4 weeks respectively after discontinuing treatment. One of these 3 patients died subsequently of congestive failure and was found at autopsy to have evidence of definitely healed bacterial endocarditis.

Friedman, Hamburger and Katz<sup>2</sup> have reported 1 case in which heparin alone was used by them for the treatment of subacute bacterial endocarditis, although other measures had previously been tried without success. The patient received a solution of heparin by continuous drip into the vein for 10 days. At the end of that time treatment was stopped because of signs of cerebral hemorrhage. At autopsy in this case there apparently were indications of healing in a vegetative process on the aortic valve leaflets. Death was ascribed to hemorrhage from an area of encephalomalacia that had probably resulted from a previous infected embolus.

Both groups of authors call attention to the danger of producing intractable hemorrhage incident to embolism in cases of bacterial endocarditis treated with heparin. They believe, however, that continued trial of this method of treatment is entirely justified in view of the apparent hopelessness of the prognosis under any other form of treatment. Certainly there is logic both to their methods and their beliefs, and it is to be hoped that forthcoming reports

in pursuit of this subject will reveal subacute bacterial endocarditis in a less dreadful aspect.  
H. H. H.

### TRY TO WRITE AN EDITORIAL

There are few things that physicians would rather be capable of doing well than to write and speak effectively. These accomplishments, however, are realized by comparatively few medical practitioners. Perhaps this is just as well for if every physician were occupied with translating his thoughts into the written and spoken word one can conjecture the appalling consequences to readers, not the least of which would be acute mental indigestion.

What inspired these generalizations was a discussion at the recent Conference of Secretaries and Editors held at Chicago. One session of the Conference was devoted to a discussion of state medical journals. Considerable attention was given to editorials and the qualities which make them worth reading. Several editors present spoke on the subject but none more effectively than Dr. Morris Fishbein, who with his usual eloquence stated what he thought an editorial should be.

It was during Dr. Fishbein's remarks that the inspiration came for this editorial. Why not suggest to physicians who read the *MEDICAL ANNALS* that they try their hand at writing editorials? Now, it might seem that this is a bold and somewhat dangerous suggestion but the editorial staff of the *MEDICAL ANNALS* is not as naive as might be thought. Neophytes in editorial writing who decide to make a contribution are due for an enlightening experience. They will learn for the first time that writing involves real labor and that facility of expression is only attained by persistent effort. Long before they have given birth to their literary efforts they will, if they have any critical sense, have learned how difficult it is to transfer an idea to a sheet of paper in such a way as to portray vividly what they had in mind. At least that is the belief of your editorial board. Why then urge this effort? Well, in the first

place, the experience will be worth something. Of more importance, there will be greater appreciation of the efforts which go into the making of a medical journal. Of course, there are some hardy souls who will eventually contribute an editorial worth while to the MEDICAL ANNALS or to some other journal. And then, of course, there are those few in every medical group who are capable of writing effectively.

No, editorials do not write themselves. The best way to prove it is to try to write one.

### PERTINENT PARAGRAPHS

Boards and Committees of the Society have been very active during the past month. The following meetings have been held:

|             |                                                                                          |
|-------------|------------------------------------------------------------------------------------------|
| November 2  | Committee on Medical Economics                                                           |
| November 7  | Committee on Industrial Medicine                                                         |
| November 13 | Committee on Public Relations                                                            |
| November 16 | Committee on Public Health                                                               |
| November 20 | Obstetrical Board                                                                        |
| November 21 | House Committee and Decorating Committee of the Woman's Auxiliary to the Medical Society |
| November 21 | Board of Censors                                                                         |
| November 24 | Committee on Medical Economics                                                           |
| November 27 | Executive Board                                                                          |
| November 28 | Subcommittee on Communicable Diseases                                                    |
| November 29 | Board of Censors                                                                         |
| November 29 | Grievance Committee                                                                      |
| November 29 | Postgraduate Education                                                                   |

The Board of Managers of the Washington Academy of Sciences has informed Dr. John H. Lyons, President of the Medical Society, that it has authorized the publication of monographs and that a Committee on Monographs has been appointed, of which Mr. Henry B. Collins, Jr. of the Smithsonian Institution is Chairman. Monographs may be on any scientific subject, preferably not more than 175 pages and may be submitted by members of the Academy and/or affiliated societies.

Dr. Lyons was requested to present this matter to the attention of Society members and urge those who may have monographs to

get in touch with the Academy's Committee at an early date.

The organization of the National Physicians' Committee for the Extension of Medical Service was recently announced. Among officers of the Committee are a number of nationally known physicians. Its Executive Board is headed by Dr. Edward H. Cary, *Chairman*, Dallas, Texas. Members of the Board are: Dr. Austin Hayden, *Secretary*, Chicago, Illinois; Dr. N. S. Davis, III, *Treasurer*, Chicago, Illinois; Dr. Irvin Abell, Louisville, Kentucky; Dr. F. F. Borzell, Philadelphia, Pennsylvania; Dr. William F. Braasch, Rochester, Minnesota; Dr. John A. Hartwell, New York, New York; Dr. Roger I. Lee, Boston, Massachusetts; Dr. Alphonse McMahon, St. Louis, Missouri; Dr. E. H. Skinner, Kansas City, Missouri; Dr. Charles B. Wright, Minneapolis, Minnesota.

According to information contained in the pamphlet issued by the Committee its objectives are:

1. To make possible the providing of medical service to the indigent and those in the low income groups, and insure the most widespread distribution of the most effective methods and equipment in medicine and surgery.

2. To assume the responsibility of counteracting destructive propaganda by familiarizing the public with the facts in connection with the methods and the achievements of American Medicine.

Interest in the Committee, it has been announced, has been manifested by a large number of physicians throughout the country. However, response to a campaign for members is to date not known. Further information in regard to this organization will undoubtedly be available within a short time.

This seems to be a year during which new organizations flourish. A letter was received by the Secretary of the Society informing him

that the organization known as the Northwest Regional Conference has been renamed the National Conference on Medical Service and enlarged to include not only states in the Northwest but all states in the Union.

Meetings of this organization have been attended by many officials of state medical societies. According to the communication, "the purpose of the conference is to provide a medium for the verbal exchange of information on progressive medical service activities being conducted throughout the United States, and to discuss the solution of problems arising from the distribution of medical service to all classes."

The Society has been invited to participate in the 1940 Conference and to send two or three representatives to officially cover the meeting. No action has yet been taken on this invitation.

The recently adopted platform of the American Medical Association, which appears in this issue of the MEDICAL ANNALS, has received wide attention by the press in recent weeks. So far as can be determined newspapers are on the whole favorable to the Association's position. Most are agreed that the views expressed in the platform are liberal and deserve public support.

The need for a Membership Committee has been urged for some time. The Society at its meeting on November 1, 1939 authorized creation of such a committee. The personnel of the Committee, which has just been announced, is as follows: Dr. Jeter C. Bradley, *Chairman*, Drs. Walter Atkinson, Philip A. Caulfield, Robert R. Hottel, Benjamin Manchester.

Questionnaires are still being received at the Society's Office in connection with the classification of physicians according to type of practice. Six hundred and twelve questionnaires have been returned to date, out of a total of 890 which were mailed to members. It is hoped that those who have not already done so will return their questionnaires at their earliest

convenience. Physicians who fail to return their forms will not appear on the classified list.

## RADIO PROGRAMS

The Committee on Radio Education has announced another change in time for the weekly radio broadcast. The new time is 11:45 a.m. to 12:00 noon on Tuesday over Station WMAL.

The following program is scheduled for December:

*December 5:* "The History of Hospitals"

Dr. Roy Lyman Sexton

*December 12:* "Tuberculosis Survey in Washington"

Dr. A. Barklie Coulter

*December 19:* "Christmas Casualties"

Dr. Ralph J. Haws

*December 26:* "Heart Disease"

Dr. Benjamin Manchester

There was one change in the program presented during November. Dr. Benjamin Manchester spoke in place of Dr. A. Barklie Coulter on November 21. His subject was "Tuberculosis in Adults."

## CALENDAR FOR COMING MEETINGS

**Wednesday, December 20:** No meeting.

**Wednesday, December 27:** No meeting.

**Wednesday, January 3:** Business meeting.

**Wednesday, January 10:** The Section on Neurology and Psychiatry will present the following program:

"Treatment of Alcoholism," Edward A. Strecker, M.D., F.A.C.P., Professor of Psychiatry, University of Pennsylvania, and co-author of the recently published book, "Alcohol, One Man's Poison."

**Wednesday, January 17:** The following program will be presented:

"The New Commitment Law for the Mentally Ill," Roger S. Cohen, M.D.

"New Drugs Regulation," Charles B. Campbell, M.D.

"The Use of Sulfanilamide in Streptococcal Otitis Infections," (tentative) Janvier W. Lindsay, M.D., E. Clarence Rice, M.D., and Maurice Selinger, M.D.

"Carcinoma of the Portio Cervicis Uteri with Skin Metastases," illustrated by motion pictures, Edward M. Pickford, M.D.

**Wednesday, January 24:** Symposium on the Surgical Abdomen.

"Diagnosis of Atypical Acute Appendicitis," Matthew White Perry, M.D.

"A Newer and Safer Technic in Management of Appendicitis with Perforation," Edward A. Cafritz, M.D.

"Management of Acute Cholecystitis," James A. Cahill, Jr., M.D.



## NEWS AND PERSONALS

The officers of the **United States Chapter of the International College of Surgeons** invite all physicians and surgeons in good standing to attend their Fourth Assembly, which will be held in Venice, Florida, February 11-14, 1940. There will be no registration fee. General information may be received by addressing Dr. Fred H. Albee, Chairman, 57 West 57th Street, New York City. For information about the presentation of scientific papers or exhibits, write to Dr. Charles H. Arnold, Secretary of the Scientific Assembly, Terminal Building, Lincoln, Nebraska.

**National Social Hygiene Day** will be observed for the fourth time on February 1, 1940, according to Dr. Walter Clarke, Executive Director of the American Social Hygiene Association. Plans have been made for more than 5,000 community and regional meetings over the country and will include, among other features, the release of a new sound motion picture on syphilis entitled, "With These Weapons."

Dr. Clarke gave some interesting facts in his review of the gains made against syphilis in recent years. The number of cases of syphilis under treatment in the United States, he states, has greatly increased and more private physicians and more public clinics are treating the disease than ever before. Dr. Clarke said this did not mean that there is more syphilis, but merely indicates that there are more cases under care. Blood tests have reached a new high during the past year, numbering almost 11,000,000, showing that physicians are making increased use of modern procedures for diagnosis. Nineteen states now require examinations for syphilis in applicants for marriage licenses while 17 states ask similar tests for expectant mothers.

Information concerning participation in Social Hygiene Day, and program and publicity aids, may be secured by writing the Social Hygiene Day Service, American Social Hygiene Association, 50 West 50th Street, New York, N. Y.

**The Thirty-Third Annual Session of the Southern Medical Association**, which was held in Memphis, Tennessee, November 21-24, 1939, was well attended by Washington physicians. Dr. R. A. Vonderlehr, Assistant Surgeon General of the United States Public Health Service, gave a radio address

entitled "Good Sense and Control of Syphilis." Dr. William Thornwall Davis described the Mutual Health Service plan of the District of Columbia before the Conference for State and National Medical Leaders on November 21. Unusual interest was shown in the plan as evidenced by the discussion which followed the talk.

Dr. Henry G. Hadley presented a scientific exhibit entitled, "(1) Abnormalities of the Spine and Their Clinical Significance, and (2) The Tobacco Habit: Its Effect upon Longevity, Metabolism and Circulatory System."

Dr. Oscar B. Hunter was elected Councillor of the Southern Medical Association for the District of Columbia. Dr. Margaret M. Nicholson, Chairman of Women Physicians, presided at the twenty-fifth annual meeting and dinner of Women Physicians of the Southern Medical Association held at the Gayoso Hotel, November 23.

The following Society members attended the session, as indicated by the registration list:

Drs. Joseph B. Bogan, Edgar P. Copeland, William T. Davis, Henry G. Hadley, H. H. Hazen, R. K. Hollingsworth, Oscar B. Hunter, Jacob Kotz, P. A. McLendon, Margaret M. Nicholson, Eugene R. Whitmore and Oscar Wilkinson.

The annual meeting of the **American Academy of Pediatrics** was held in Cincinnati, Ohio, November 16-18, 1939. At the business meeting November 16, Dr. Joseph S. Wall, Chairman of the Legislative Committee, presented for adoption resolutions which the Academy endorsed. They were as follows:

1. That the American Academy of Pediatrics approves in principle the objectives of the National Health Act as it relates to children, but recommends that the Senate Committee on Education and Labor give further detailed study to its provisions, with the counsel and advice of practicing physicians and professional organizations who together will form the instrumentalities through which the success or failure of the Act will be determined.

2. That the American Academy of Pediatrics, regarding the provisions for maternal and child welfare, and the care of sick children, definitely favors the use of public funds to provide such services to those groups of the population unable to pay for medical services, to the end that the standards of medical care may be maintained at a high level among such groups.

The **District Health Department** announces that there are openings for three resident physicians at **Glenn Dale Sanatorium**. The Department requests the Society to inform it in regard to any physicians who are interested and can qualify for these positions. One position pays \$2,000 per annum. Two pay \$2,600 per annum, less \$300 per annum for maintenance. The following experience is required:

"Two years work after graduation from a Class A Medical School, one of which is an internship in a general hospital; training should include some training in tuberculosis."

Any physician interested is requested to leave his name at the Medical Society's Office.

**Washington's new morgue** was formally opened by dedicatory services November 21, which ceremonies marked the completion of a new \$100,000 structure on the grounds of Gallinger Hospital. Coroner A. Magruder MacDonald received congratulations on the successful termination of a long waged civic drive to replace the obsolete structure on the waterfront with a new building with modern equipment.

Dr. MacDonald related how the work of the District coroner's office had increased since its establishment in 1868. In that year the city had 6 suicides, 7 murders, 136 accidents, 507 deaths, 22 inquests and 26 autopsies. In 1939 there were 143 suicides, 76 homicides, 437 accidents, 2,557 deaths, 140 inquests and 568 autopsies.

President John H. Lyons represented the Medical Society at the opening ceremonies.

**The Doctors' Hospital, Incorporated**, announces that there will be distributed to every member of The Medical Society of the District of Columbia application blanks for staff privileges in the new hospital to be opened on or about February 1, 1940.

It is hoped that all members of the Medical Society will fill out the blanks when received and return them promptly to the Business Office of the Hospital Corporation, 1835 Eye Street, N.W., in order that such applications may be properly considered and acted upon by the various committees and the Board of Directors so there will be no delay or confusion in the admission of patients when the hospital is open and ready for occupancy.

This is a requirement of the American College of

Surgeons and the Council on Medical Education and Hospitals of the American Medical Association, and is to be complied with by all members of the staff, including the members of the Board of Directors.

The **George Washington University Medical Society** will meet December 16, 1939, at 1335 H Street, N.W., 8:00 p.m. Dr. Walter Dandy of Johns Hopkins Medical School will present a paper on "Tic Douloureux."

At the meeting on November 18, Dr. Arthur M. Fishberg, Associate Physician to Beth Israel Hospital and Associate in Medicine, Mount Sinai Hospital, New York City, addressed the society on the subject, "Recent Advances in Renal and Vascular Diseases."

The next meeting of the **Georgetown Clinical Society** will be held December 19 at the University Club, when the following program will be presented: "Injection Treatment of Hernia," Dr. Philip A. Caulfield; "Carcinoma of the Thyroid Gland," Dr. Howard H. Strine, Jr. Drs. Stafford W. Hawken, Allan E. King and Paul J. O'Donnell will lead the discussion.

"General Practitioner's Forum" has been announced as the topic for the evening of January 16. Discussion will be carried on by Drs. Warren B. Burch, John V. Dolan, R. J. McNulty and Ernest H. Aschenbach.

The **Washington Ophthalmological Society** will meet January 8, 1940, at the Episcopal Eye, Ear and Throat Hospital, 8:00 p.m., at which time Dr. Francis H. Adler, Professor of Ophthalmology, University of Pennsylvania School of Medicine, Philadelphia, will be the guest speaker. Dr. LeRoy W. Hyde will give a case report on "Vitamin A Deficiency."

The **Georgetown University Alumni Club** was organized as a new society October 30, 1939, in Copley Hall at the University. A constitution was adopted and a permanent organization effected. The following members were elected to office:

Dr. Leo Brison Norris, *President*; Dr. Aloysius J. Connolly, *Vice-president*; Dr. Harry F. Davies, *Secretary-Treasurer*.

The Medical Alumni Club is planning to hold at least two meetings this year with interesting pro-



grams. All graduates of Georgetown University School of Medicine are eligible for membership.

The **Washington Gynecological Society** held its first dinner meeting for the year at the Mayflower Hotel, October 28. Dr. Roy Lyman Sexton related his experiences in Europe this summer, illustrating his talk with colored motion pictures. Dr. F. Earle Spencer of the Homeopathic Hospital of Wilmington, Delaware, gave an account of a fishing expedition in the Bahamas, which he illustrated with colored movies.

The **Washington-Baltimore Psychoanalytic Society** met at the Shoreham Hotel December 9. Dr. Edith Weigert of the staff of the Sheppard and Enoch Pratt Hospital presented a paper entitled, "Psychoanalytic Notes on Sleep and Convulsion Treatment in Functional Psychoses."

The **George Martin Kober Medical Society** held a dinner meeting November 20 at the Columbia Country Club. The essay of the evening was given by Dr. J. J. Lynch, entitled "The Second Stage of Labor." Dr. Garnet Ault reported a case of "Sigmoid Polyp and Sigmoid Carcinoma."

At the meeting of the **Washington Society of Pathologists** at the Army Medical Museum on November 4, 1939, formal presentations were made as follows: "An Unusual Renal Tumor," Dr. Lester Neuman; "Multiple Cutaneous Lesions," Dr. V. J. Dardinski; "Tumor of the Breast," Dr. Oscar B. Hunter; "Subacute Encephalitis: Report of a Case Dying of Acute Coronary Thrombosis and Cor Pulmonale after Metrazol Injection," Dr. Walter Freeman.

The next meeting is scheduled for Saturday, January 6, 1940, 1:30 p.m., in the Army Medical Museum.

The **Women's Medical Society of the District of Columbia** held a meeting December 5 at 3737 Huntington Street, N.W., with Drs. Petrena Abbe-Shea and Irma Belk-Hobart as hostesses. Dr. Elizabeth Parker spoke on "Recent Advances in Endocrinology."

Dr. Anna Bartsch-Dunne was hostess for the October meeting, at which time Dr. Thelma Hunt

gave a talk on "Recent Advances in Psychology as Related to Medicine."

The **Saint Elizabeths Hospital Medical Society** has elected new officers as follows:

Dr. W. W. Eldridge, *President*; Dr. M. B. Pettit, *Secretary-Treasurer*.

At the meeting of the **Section on Ophthalmology, Otology, Rhinology and Laryngology** on November 17, Dr. Harry F. Davies and Dr. Leroy L. Sawyer gave a report on the recent meeting of the American Academy of Ophthalmology and Otolaryngology. Dr. E. G. Breeding reported on the meeting of the American College of Surgeons. Dr. H. S. Bernton illustrated his discussion on allergy with moving pictures. Dr. John H. Trinder gave a talk on "The Waldeyer Ring."

The program for the **Section on Neurology and Psychiatry** December 7 consisted of a panel discussion, led by Judge Edward Curran, on the subject, "What Is a Judge to Do?" Among those who participated in the discussion were Mr. Gillespie Walsh of the Commission on Mental Health, Dr. Winfred Overholser, Dr. Paul Ewerhardt and Dr. James Lewald.

The **Residents' Journal Club of Children's Hospital** presented the following program November 16: "The Problem of Dental Caries," Dr. Victor Isaacson; a review of recent pediatric literature, Dr. Isadore Cohen. Films on "Obstructive Laryngitis" and "Pediatric Nursing Technic" were shown by courtesy of Mead Johnson and Company.

**Dr. Wilburt C. Davison**, Dean of Duke University School of Medicine, gave a lecture November 9 before the faculty and students of the George Washington School of Medicine. He was the second speaker in a series of lectures sponsored by the Smith-Reed-Russell Society. This society is named for Drs. Theobald Smith, Walter Reed and Frederick Russell, who successively held the chair of bacteriology at George Washington University School of Medicine.

**Dr. Wallace M. Yater** addressed the Mid-Atlantic Association of Chiropractors on the subject of peripheral vascular diseases on November 19 at the



Washington Hotel. The chiropodists have been designated by the Judicial Council of the American Medical Association as an ethical group of non-medical men practising a limited field of scientific medicine. Schools of podiatry now are requiring two years of college preparation and three years of intensive instruction in podiatry. Many of these schools have on their faculties members of the faculties of medical schools.

Dr. Yater also addressed the Torch Club on the subject of modern medicine at the Cosmos Club on November 28.

The following appointments were confirmed by the Executive Board at its meeting October 23: **Dr. Daniel L. Finucane** to the Subcommittee on Sanitation of the Committee on Public Health; **Dr. Oscar B. Hunter** as Chairman of the Subcommittee on Attendance of the Committee on Arrangements for the 1940 Annual Scientific Assembly; and **Dr. Katharine A. Chapman** to the Subcommittee on Associates for the 1940 Annual Assembly.

Among the **Army medical officers** of Washington to receive new assignments are several members of the Society. Drs. William S. Miller, Herbert H. Diamond, Thomas A. Egan, Richard L. Jackson and Howard Katzman have been assigned to the 73rd General Hospital. Dr. Samuel J. Sugar has been assigned to the 364th Medical Regiment and to the 86th General Hospital.

**Dr. George M. Leiby** of the North Carolina State Health Department has accepted an appointment as full-time director of the Social Hygiene Bureau of the District Health Department. He assumed his new duties December 1 and succeeds Dr. Thomas C. Thompson, who has filled the position on a part-time basis.

**Dr. Wallace M. Yater** has been elected a member of the Advisory Board of the Alumni Association of the Mayo Foundation for a three-year period expiring December 31, 1942.

**Dr. Oscar B. Hunter** has been appointed Local Councillor for the American Society of Clinical Pathologists for the District of Columbia and Metropolitan area.

Dr. Hunter addressed the Sixth Conference of Southern Pathologists at Memphis, Tennessee, No-

vember 20, on the subject, "The Present-Day Status of Clinical Pathology and Problems of the Clinical Pathologist."

**Dr. Walter Rapaport** has been appointed Medical Director of the Mendocino State Hospital, Talmadge, California, and assumed his new duties about two months ago. He was formerly stationed at the Napa State Hospital, Imola, California.

Tribute was paid to the late **Dr. Everett M. Ellison** by Washington's religious and civic leaders in a service at the Foundry Methodist Church, October 29. Dr. Ellison, former president of the United Dry Forces of the District, was lauded for his efforts in behalf of the prohibition movement by Colonel William O. Tufts. Another tribute was paid him by Linn C. Drake, local Boy Scout executive and a member of the Loyal Knights of the Roundtable, whose international convention Dr. Ellison was attending in Mexico when stricken. Dr. Ellison was a former local and international president. Other speakers were Dr. Joseph D. Stout of the Medical Society, Harvey V. Prentice of the Gospel Mission, James E. Smith of the Y. M. C. A., and Dr. George B. Woods of the Torch Club and Foundry Church.

**Dr. A. Barklie Coulter** and **Dr. Daniel L. Finucane** were named to the Board of Directors of the District Tuberculosis Association November 17.

Dr. Coulter addressed the D. C. Federation of Women's Clubs November 27 on the general subject of how to deal with the tuberculosis situation in the District.

**Dr. Paul J. Ewerhardt** discussed "Psychiatry in a Community Place" before the civics-education section of the Twentieth Century Club November 9.

**Dr. Daniel L. Seckinger** addressed the Ladies' Board of Garfield Memorial Hospital November 16 on the subject, "Clinics of the Health Department and Related City Health Problems."

**Dr. Russell Fields** addressed the Medical Society of Wake Forest, North Carolina, on "Common Skin Diseases" November 1.

The **Health Security Administration** has moved its offices from 901 Eighth Street, N. W., to 1823 L

Street, N. W. The telephone number remains the same, Metropolitan 3900.

Paul L. Brand moved to larger quarters on November 27. His new address is 816 Connecticut Avenue, N. W., opposite the U. S. Chamber of Commerce. A projection salon has been installed where 16 mm. or 8 mm. motion picture films can be previewed.

The Medical Credit Association announces the transfer of its offices to Rooms 302 to 305, Professional Arts Building, 1722 Eye Street, N. W.

#### ANNOUNCEMENT

The Program Committee has just announced that Dr. Rock Sleyster, President of the American Medical Association, will not address the Society on January 17 because of illness. The Committee regrets Dr. Sleyster's inability to be on hand and has expressed to him the sincere hope that he will make rapid recovery.

#### BOOK REVIEWS

**Treatment in General Practice**, 2 vols. Various British authors. First American edition. Price, cloth, \$7.50. Pp. 259. Boston: Little, Brown and Company, 1939.

This two-volume work is a compilation of articles written by well-known clinical teachers in Great Britain. Practicality and simplicity are the predominating features. It is interesting to note how similar the methods employed in England are to those employed in this country. On the whole the work is excellent and can be recommended highly for the medical student and general practitioner.

**Medicolegal Phases of Occupational Diseases.** C. O. Sappington, A.B., M.D., Dr.P.H. Price \$2.75. Pp. 405. Chicago: Industrial Health Book Company, 1939.

This book is called an outline of theory and practice, and presents in handbook form the industrial insurance, medical and legal inter-relations of all the elements of occupational diseases from origins and causes to disabilities and costs. The author has presented the material in clear and concise language, indicating the coordination of the extensive and complicated factors of the field of industrial hygiene and occupational diseases. Every general practitioner or specialist who comes into

contact with medicolegal cases, as well as every lawyer, should have a copy of this book.

**New and Nonofficial Remedies, 1939.** Price, cloth, \$1.50. Pp. 684. Chicago: American Medical Association, 1939.

This volume contains descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1939. It is an important compilation which every physician should possess.

**Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1938.** Price, cloth, \$1.00. Pp. 120. Chicago: American Medical Association, 1939.

This small volume contains the comments that have appeared in the Journal of the American Medical Association during 1938.

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47. ASHE, B. I., AND BRUGER, M.: *Am. J. M. Sc.*, 1933, **186**, 670.
48. CANTAROW, A.: *Internat. Clin.*, 1935, **1**, 237.
49. PETERS, J. P., AND VAN SLYKE, D. D.: *Quantitative Clinical Chemistry: Volume I: Interpretations.* Baltimore, Williams & Wilkins, 1931.
50. EPSTEIN, E. Z.: *Arch. Int. Med.*, 1932, **50**, 203.
51. GARDNER, J. A., AND GAINSBOROUGH, H.: *Quart. J. Med.*, 1930, **23**, 465.
52. EPSTEIN, E. Z., AND GREENSPAN, E. B.: *Arch. Int. Med.*, 1936, **58**, 860.
53. SPERRY, W. M.: *J. Biol. Chem.*, 1927, **71**, 351.
54. SALOMON, H., AND SILVA, L. L.: *Arch. f. Verdauundgkr.*, 1926, **36**, 353; *H. SALOMON: Ibid.*, 1926, **39**, 46; *Ibid.*, 1927, **41**, 257.
55. BÜRGER, M., AND HABS, H.: *Klin. Wchnschr.*, 1927, **6**, 2221.
56. STROEBE, F.: *Ibid.*, 1932, **11**, 636.
57. EPSTEIN, A., AND LANDE, H.: *Arch. Int. Med.*, 1922, **30**, 563.
58. MASON, R. L., HUNT, H. M., AND HURXTHAL, L. M.: *New England J. Med.*, 1930, **203**, 1273.
59. SCHWARZ, H., AND TOPPER, A.: *J. Pediat.*, 1933, **3**, 242.
60. HIGGINS, W. H.: *Am. J. M. Sc.*, 1936, **191**, 80.
61. GARDNER, J. A., AND GAINSBOROUGH, H.: *Brit. M. J.*, 1928, **2**, 935.
62. MCGEE, L. C.: *Ann. Int. Med.*, 1935, **9**, 728.
63. HURXTHAL, L. M.: *Arch. Int. Med.*, 1934, **53**, 762.
64. GARDNER, J. A.: *Proc. Roy. Soc. Med.*, 1932, **25**, 505.
65. BRONSTEIN, I. P.: *J. A. M. A.*, 1933, **100**, 1661.
66. WESTRA, J. J., AND KUNDE, M. M.: *Proc. Soc. Exper. Biol. & Med.*, 1932, **29**, 677.
67. BOYD, E. M., AND CONNELL, W. F.: *Quart. J. Med.*, 1936, **5**, 455.
68. GRABFIELD, G. P., AND CAMPBELL, A. G.: *New England J. Med.*, 1931, **205**, 1148.

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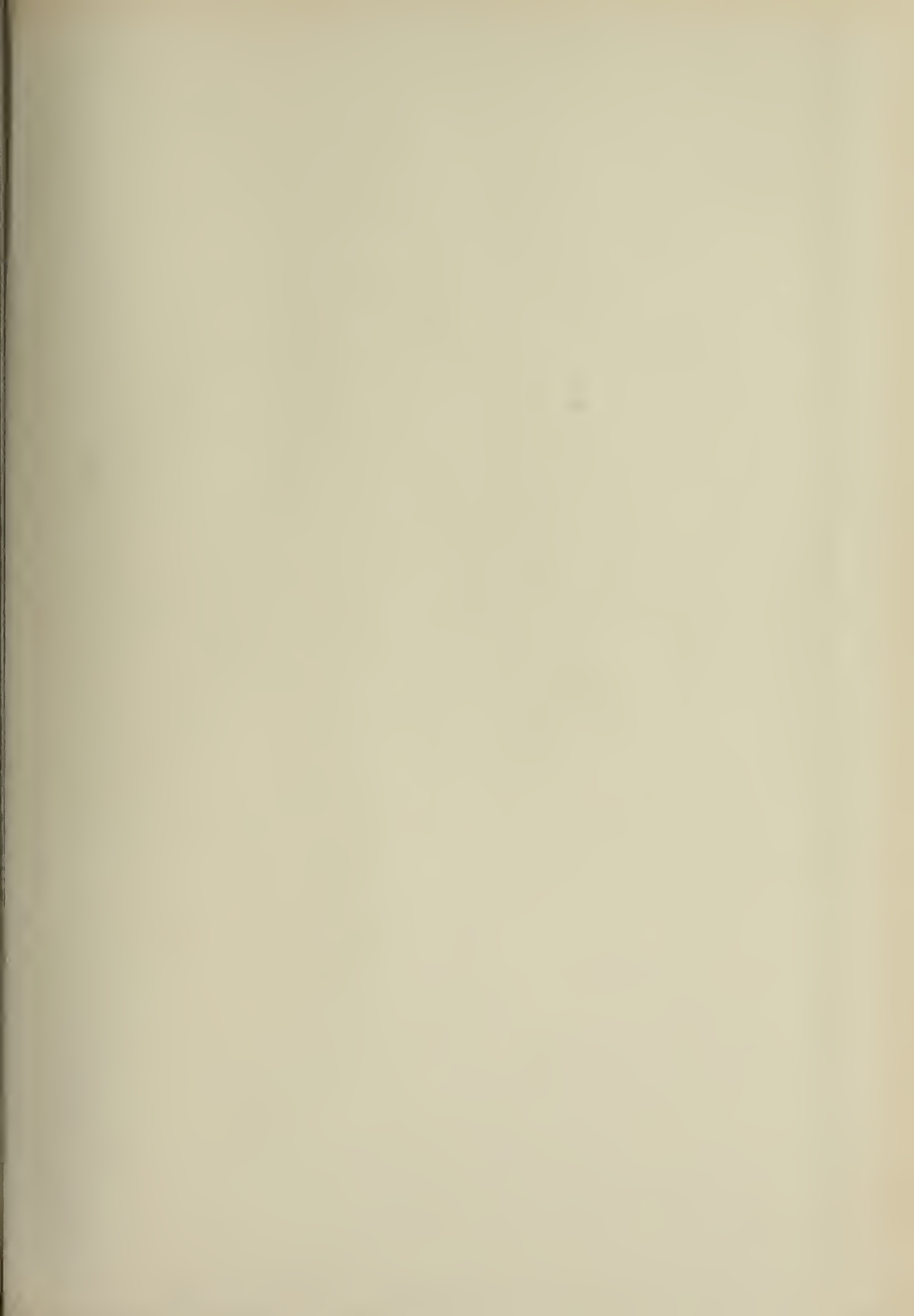
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